Organisation for Economic Co-operation and Development

DCD/DAC/ENV(2020)2

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English - Or. English

27 November 2020

DEVELOPMENT CO-OPERATION DIRECTORATE
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The role of domestic DFIs in using blended finance for sustainable development and climate action

The case of Brazil

Five years on from the new global sustainable development agenda, the SDG investment gap remains in the trillions and the vast majority of financial flows are not aligned with the Paris Agreement on climate change. The COVID-19 crisis further aggravates the need to mobilise commercial capital for sustainable development outcomes. Development banks and development finance institutions (DFIs) are important actors in blended finance – the strategic use of development finance for the mobilisation of additional, commercial finance towards sustainable development in developing countries – but institutions from emerging economies and developing countries are to date an underutilised conduit in global efforts to bridge the investment gap.

This paper provides an overview of Brazil's national system of development finance and explores the use of and challenges to blended finance within this system. It shows that blended finance is still at a nascent stage in Brazil, but that Brazil's domestic DFIs of different size and with different scope are increasingly exploring the use of blended finance. The paper argues the Brazil can capitalise on its multi-layered system of DFIs in advancing the blended finance agenda, which will require continued collaboration between international and domestic development banks, as well as with policy makers and the private sector. Efforts to build the evidence base on blended finance in local contexts will further support this agenda.

Contacts:
Özlem TASKIN Ozlem.TASKIN@oecd.org
Valentina BELLESI Valentina.BELLESI@oecd.org
Lasse MOLLER Lasse.MOLLER@oecd.org

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Abstract

Five years on from the new global sustainable development agenda, the SDG investment gap remains in the trillions and the vast majority of financial flows are not aligned with the Paris Agreement on climate change. The COVID-19 crisis further aggravates the need to mobilise commercial capital for sustainable development outcomes. Development banks and development finance institutions (DFIs) are important actors in blended finance – the strategic use of development finance for the mobilisation of additional, commercial finance towards sustainable development in developing countries – but institutions from emerging economies and developing countries are to date an underutilised conduit in global efforts to bridge the investment gap. This paper provides an overview of Brazil's national system of development finance and explores the use of and challenges to blended finance within this system. It shows that blended finance is still at a nascent stage in Brazil, but that Brazil's domestic DFIs of different size and with different scope are increasingly exploring the use of blended finance. The paper argues the Brazil can capitalise on its multi-layered system of DFIs in advancing the blended finance agenda, which will require continued collaboration between international and domestic development banks, as well as with policy makers and the private sector. Efforts to build the evidence base on blended finance in local contexts will further support this agenda.

Keywords: development banks, blended finance, green finance, development co-operation, development finance

JEL Classification: O13, O16, O19, O22, O43, O44, Q01, Q54

Acknowledgments

This working paper was authored by Özlem Taskin, Valentina Bellesi, Carolyn Neunuebel and Lasse Moller, under the guidance of Jens Sedemund and Paul Horrocks, and with oversight from Haje Schütte, OECD Development Co-operation Directorate. It benefitted from strong collaboration with SITAWI Finanças do Bem, including through initial research and drafting by Rafael Gersely.

The paper draws on a survey of members of the Association of Development Banks in Brazil and case studies from Brazil's national development bank, BNDES, and the development bank of the state of Minas Gerais, BDMG. Secondary research and follow up interviews augmented the results of the survey, and quantitative analysis on private finance mobilised by official development finance interventions provide a complementary view on the state of blended finance in Brazil at an international level. Germany's development co-operation agency, GIZ, provided financial and technical support towards the research conducted for this paper.

The authors would like to specifically thank the following experts for their substantive feedback and support in authoring the paper: Sebastian Sommer and Daniel Ricas from the GIZ project 'Green and Sustainable Finance in Brazil'; Cinthia Helena de Oliveira Bechelaine, Gustavo Nascimento, Daniel Lage da Assuncao, Larissa Wolochate Aracema Ladeira, Leonardo Leao, Aurea Regina Evangelista de Carvalho, Lucas Ataydes Leite Seabra, Vinicio Jose Stort and Adauto Modesto Junior (BMDG); Nabil Kadri, Thaissa Ferreira de Souza, Julio Guiomar, and Raphael Stein, (BNDES); Andrej Slivnik (ABDE); Olva Lins Romano Pereira (Central Bank of Brazil); Raquel Breda dos Santos, Elida Almeida, Marcos Machado Guimaraes, Marco Rocha (Ministry of Economy of Brazil); Andrezza Brandão Barbosa (Ministry of Foreign Affairs of Brazil); Lamine Sow (AFD); Enilce Leite Melo (Financial Innovation LAB Brasil); and Maria Netto, Rafael Cavazzoni Lima, Rodrigo Pereira Porto, Luciano Schweizer, Eduardo Sierra, Maria Chiara Trabacchi, Alexander Vasa (IDB).

The authors further thank Cécile Sangare and Tomas Hos (OECD) for statistical support on the private finance mobilised data and feedback, and, Jens Arnold, Juan Casado Asensio, Takayoshi Kato and Shashwati Shankar Padmanabhan (OECD) for providing insightful comments. Finally, the team is grateful to Vitoria Souza (GIZ) and João Bosco for layout support.

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

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Abbreviations and acronyms

AAAA	Addis Ababa Action Agenda
ABDE	Associação Brasileira de Desenvolvimento (Brazilian Association of Development)
ABGF	Brazilian Guarantees and Fund Managements Agency
ALIDE	Latin American Association of Development Financing Institutions
AUM	Assets under Management
BDMG	Banco de Desenvolvimento de Minas Gerais (Development Bank of Minas Gerais)
BNDES	Banco Nacional de Desenvolvimento Econômico e Social (Brazilian Development Bank)
BRDE	Banco Regional de Desenvolvimento do Extremo Sul (Regional Development Bank of the Far South)
BRIICS	Brazil, Russia, India, Indonesia, China, South Africa
BRL	Brazilian real
CAF	Corporación Andina de Fomento (Development Bank of Latin America)
CDB	Caribbean Development Bank
CIV	Collective Investment Vehicle
CSO	Civil Society Organisation
CVM	Comissão de Valores Mobiliários (Securities and Exchange Commission of Brazil)
CEBDS	Conselho Empresarial Brasileiro para o Desenvolvimento Sustentável (Brazilian Business Council on Sustainable Development)
DAC	Development Assistance Committee
DFI	Development Finance Institution
EPG	Eminent Persons Group
ESG	Environmental, Social and Governance
FEBRABAN	Federação Brasileira de Bancos (Brazilian Federation of Banks)
FGI	Fundo Garantidor para Investimentos (Investment Guarantor Fund)
G20	Group of Twenty (Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Mexico, Russia, Saudi Arabia, South Africa, South Korea, Turkey, United Kingdom, United States and European Union)
G7	Group of Seven (Canada, France, Germany, Italy, Japan, United Kingdom, United States)
ICT	Information and Communications Technology
IDB	Inter-American Development Bank

IFC	International Finance Corporation
LAAIA	Latin American Association of Insurance Agencies
LAC	Latin America and Caribbean
LAVCA	Association for Private Capital Investment in Latin America
LDCs	Least Developed Countries
LFI	Local Financing Institution
MDB	Multilateral Development Bank
MSMEs	Micro, small and medium-sized enterprises
NDB	National Development Bank
NDC	Nationally Determined Contribution
OPV	Organic Photovoltaic
PEAX	Programa de Fomento à Estruturação e Avaliação Externa de Títulos Verdes
PNMC	Política Nacional sobre Mudança do Clima (National Policy on Climate Change)
PPA	Plano Plurianual (Multi-year plan)
PPP	Public-Private-Partnership
SDG	Sustainable Development Goal
SME	Small and Medium-sized Enterprise
SPV	Special Purpose Vehicle
THK	Tri Hita Karana
TLP	Taxa de Longo Prazo (Long-term rate)
UMIC	Upper-middle Income Country
USD	US-Dollar
ZAR	South African rand

Executive summary

Delivering sustainable development will require more resources than are currently being spent on development outcomes. Blended finance – the strategic use of development finance for the mobilisation of additional, commercial finance towards sustainable development– has emerged as part of the solution to help bridge the investment gap. Development banks from the Global South will be critical in advancing the blended finance agenda and mobilising commercial capital at scale, but more information and evidence is needed on these institutions, their funding models, and good practice examples and challenges encountered in blended finance. The case of Brazil is an interesting example given its multi-layered and interlinked system of domestic development finance institutions (DFIs)[1].

This paper presents an initial assessment of the state of blended finance by internationally and domestically operating development banks, and emerging priorities for action to advance the blended finance agenda, drawing on data of the OECD Development Assistance Committee (DAC), a survey among Brazil's domestic DFIs, project-level case studies, interviews and desk research. It argues that while blending is still at a nascent stage in Brazil, its deployment by the country's domestic DFIs needs to capitalise on the available system of domestic development finance and well-established co-operation with international partners, and be based on a solid foundation of data and information on blended finance, as well as additional evidence and analysis. While this paper is meant primarily for development finance and co-operation actors with operations in Brazil, its findings and recommendations are useful for policy makers and practitioners aiming to advance blended finance in other countries.

Key findings

Blended finance and development banks are key in bridging the investment gap to deliver the SDGs and climate action globally and in Brazil, but blended finance needs to be part of broader efforts to build future-proof markets. Private finance mobilised by official development finance intervention is on an upward trend globally, and has in particular increased recently in the region of Central and South America where globally the largest volumes of private finance in 2017 and 2018 were mobilised. Brazil ranks among the top ten recipients of private finance mobilised from official development finance interventions. Brazil's domestic DFIs have comparative advantages – due to their proximity to local markets, provision of local currency financing and sectoral expertise – over their international counterparts in mobilising commercial capital and building markets. However, the practice of blended finance is only nascent in Brazil's domestic DFIs. While the largest volumes of blended finance mobilised by official development finance interventions are channelled in the energy, banking and financial services sector of Brazil, blended finance could make a difference and catalyse resources across the country's development priorities more broadly, including for climate outcomes.

A critical first step to advancing the blended finance agenda in Brazil is a sound understanding of its national system of DFIs and the fundamental parameters that define individual DFIs within this system. Brazil's multi-layered system of development banking emerged out of the country's high level of decentralisation and the differing developing priorities of federal states. In contrast to other emerging economies, domestic DFIs in Brazil can have both different sectoral and regional focus. Within its national

[1] The definition for a domestic development finance institution in Brazil used in this report is taken from the Brazilian Association of Development (ABDE) and differs from the OECD definition of development finance institution, i.e. specialised development banks or subsidiaries that only work with private sector participants.

system of DFIs, six different types of institutions exist, with different mandates, governance and regulations. Sub-national developments banks are smaller than their national counterparts but hold a prominent role in meeting local development needs. To date, BNDES, Brazil's national development bank, is the main funding source of many DFIs, but these institutions are increasingly looking to diversify their access to capital as a result of changes in funding models. BNDES and the sub-national development bank of the state of Minas Gerais, BDMG, are already deploying blended finance. Changes in funding models and efforts to promote capital market development and future-proof the real economy by financing climate action have created momentum for these institutions to engage in blended finance.

While interest in blending is increasing and Brazil's domestic DFIs have begun to engage in blended finance, the evidence base is still limited and hinders other institutions to follow suit. Different efforts have aimed at generating information and evidence on the use of blended finance in Brazil, including through its national development bank BNDES. This paper is a first step in mapping the blending landscape within the system of Brazil's domestic DFIs, including but not limited to BNDES. This is complemented by an overview of the state of blended finance in Brazil by official development finance interventions. The mapping is however not comprehensive and comparable studies of blended finance by domestic DFIs of other emerging economies and/or the region of Latin America and Caribbean do not exist due to lack of comparable and consistent data on blended finance across institutions. Significant shortcomings in monitoring and evaluation systems of Brazil's domestic DFIs contribute to gaps in the evidence base of blended finance. The OECD is engaged in work on tracking the volumes of private finance mobilised by DAC members, representing a potentially useful benchmark for countries interested in advancing the blended finance agenda domestically.

Areas of emerging good practice approaches and lessons learned

Changes in funding models of DFIs provide an opportunity for blended finance and a re-envisioning of development banking that is fit for purpose. The change of funding models across Brazil's system of DFIs can provide momentum to advance blended finance in Brazil. To harness DFIs' ability to mobilise commercial capital for sustainable development, DFIs and their shareholders can establish clear and coherent mandates, incentive systems and capacities for mobilisation and climate action. Mandates, incentive systems and capacities are fundamental parameters that can enable a shift of the business model of a DFI from being sole financer to mobiliser of additional, commercial resources for development interventions. Spurred by the increasing national awareness of the limitations of public finance and the need for more investment in the current crisis context and beyond, development banks across the globe need to make this shift to drive forward progress on sustainable development in emerging economies and developing countries. It is important that blended finance is understood as an approach to bring development and commercial actors together, not to mobilise resources from e.g. MDBs or bilateral development finance providers.

The proof of blended finance for sustainable development and climate outcomes in Brazil ultimately depends on how it is rolled out and deployed. As an approach to mobilise additional commercial capital, blended finance is increasingly proving to be an important tool in bridging the SDG investment gap and channelling resources to climate outcomes in emerging economies countries and developing countries. To ensure that the application of blended finance by Brazil's domestic DFIs targets the country's set development priorities, it is important that DFIs explore the range of blended finance instruments and mechanisms, design blending to build markets and address local needs, and actively work with the private sector to demonstrate business cases and share success stories and lessons learned. Brazil's DFIs already have established partnerships with internationally-operating development banks and agencies that can also support the effective deployment of blended finance in Brazil. This paper and other OECD relevant work aim to advance evidence and common frameworks on blended finance and development banks to additionally support the global sustainable development agenda of 2015.

1. Introduction

The SDG investment gap is in the trillions, and will further increase as a result of the COVID-19 crisis

In 2015, the international community agreed on a new global agenda – with the 2030 Agenda for Sustainable Development at its core – to reignite growth, deliver the Sustainable Development Goals (SDGs), reduce climate risks and increase resilience to climate change impacts. Achieving these ambitious objectives is particularly challenging for emerging economies and developing countries which face an estimated annual investment gap of USD 2.5 trillion (UNCTAD, 2014[1]). Across these two country groupings spending needs differ profoundly: emerging economies face average additional spending needs of 4 percentage points of their GDP in 2030 (relative to current spending to GDP), whereas developing countries are estimated to require additional spending of 15 percentage points of GDP (Gaspar et al., 2019[2]). The bulk of this investment gap is for built and natural infrastructure, which is critical to delivering the 2030 Agenda and the Paris Agreement. The COVID-19 crisis further aggravates the prevalent trend of insufficient volumes of financing for development (OECD, 2018[3]; OECD, 2020[4]).

Blended finance and development banks – including those from the Global South – are critical in bridging the SDG investment gap

Delivering the new global agenda will require a step-change in both public and private investment in emerging economies and developing countries. While there is no shortage of capital worldwide, commercial capital is not yet channelled into sustainable development-related investments in developing countries at the required scale due to perceived and real project and/or country-related risks. Blended finance – the strategic use of development finance for the mobilisation of additional, commercial finance towards sustainable development in developing countries (OECD, 2018[5]) – has already proven to address some of the key barriers for mobilisation. With the investment gap for sustainable development in the trillions, many donor governments, multilateral and bilateral development banks and development finance institutions (DFIs) are increasing their efforts in blended finance as recent OECD data shows. Less information and evidence is however available on how national development banks (NDBs) of emerging economies and developing countries – publicly owned, domestically-focused financial institutions with a specific development mandate – are engaging in blended finance, despite their key role in e.g. infrastructure financing and achieving identified development priorities.

New research on Brazil's national system of development banking and its use of blended finance

Against this background, and building on previous OECD work, this paper aims at developing the evidence base on blended finance through emerging economy and developing country domestic DFIs. The case of Brazil was chosen for this paper given Brazil's multi-layered and interlinked system of domestic DFIs that includes banks, other financial institutions and development agencies of different size and with different sectoral and geographic focus. Despite these differences, many of Brazil's DFIs are members of the Brazilian Association of Development Banks (*Associação Brasileira de Desenvolvimento*, ABDE), which provides a platform for knowledge sharing among its members and with key Brazilian stakeholders to advance strategic priorities – including, for example, promoting the use of blended finance.

While Brazil's domestic DFIs understand the critical nature of blended finance in achieving the country's development priorities and their own mandates, the use of blended finance remains limited. The paper thus provides concise deep-dives on two development banks – BNDES and BDMG – that are already engaging in blended finance, and explores elements across governance, funding structures, mandates, strategies and policies that can support the take-up of blended finance among the menu of instruments of development banking. It further depicts blended finance case studies of these two development banks to better understand context, blended finance structures, outcomes achieved and challenges encountered. Given the indivisible nature of ambitious action on climate change and sustainable development, climate change mitigation and adaptation as well as green finance are highlighted throughout the paper.

Structure of this paper

The paper is structured as follows: Chapter 2 provides relevant background on blended finance and its principles, and maps the current state of private finance mobilised in Brazil through official development finance interventions, e.g. through multilateral and bilateral development banks. Chapter 2 concludes with an overview of the system of development banks – multilateral, bilateral, regional, national and sub-national – and the role of domestic DFIs in mobilising commercial capital for sustainable development and climate action. Chapter 3 first outlines Brazil's development priorities and its system of domestic DFIs, before it provides concise institutional deep-dives on two development banks that are already engaging in blended finance. Chapter 4 maps blended finance by Brazil's DFIs and challenges encountered in the uptake of blended finance at scale. Chapter 5 presents emerging insights to advance blended finance in Brazil, in particular emerging areas of good practice and lessons learnt, research gaps and areas for further work.

2. The importance of blended finance and its current state in Brazil

In brief

- The sustainable development investment gap remains substantial as project- and country-related risks continue to impede the mobilisation of commercial finance in emerging economies and developing countries at scale. The COVID-19 crisis further increases this investment gap.
- Blended finance can address some of the key barriers for mobilisation at a project- or fund-level, but needs to be part of efforts to improve the policy and regulatory environment to catalyse broader financial flows for sustainable development and climate outcomes.
- Private finance mobilised by official development finance interventions has recently increased significantly in the region of Central and Southern America.
- Brazil is among the top ten recipients of private finance mobilised from official development finance interventions. The energy and banking and financial services sectors were the largest destination sectors for private finance in Brazil.
- Development banks and DFIs are critical in blending, and development banks of the Global South have comparative advantages – due to their proximity to local markets, provision of local currency financing and sectoral expertise – over their international counterparts in the mobilisation of commercial capital. To date, however, domestic development banks remain underutilised in global efforts to bridge the SDG development investment gap.

2.1. Rationale, definition and actors of blended finance

The global agenda of 2015 calls for innovative financing for development approaches

Five years on from the new global agenda, it is clear that innovative financing approaches are needed to channel commercial investments towards sustainable development, and that ambitious climate action is a prerequisite for sustainable development (OECD, 2017[6]); (OECD, 2019[7]). The COVID-19 crisis further aggravates the need to mobilise commercial capital as immediate rescue measures are expected to leave public budgets and balance sheets of multilateral development banks increasingly strained (Box 2.1) (OECD, 2020[4]). While commercial investors are increasingly taking Environmental, Social and Governance (ESG) factors into considerations, perceived and real macroeconomic and business risks, and/or regulatory and political risks in emerging economies and developing countries continue to impede the mobilisation of commercial finance at scale (OECD, 2018[8]). Shallow and immature financial markets further discourage commercial investors from channelling their resources to emerging economies and developing countries.

Box 2.1. The impact of the COVID-19 crisis on financing for development and the relevance of blended finance in the recovery

The COVID-19 crisis is having immense health, economic and social impacts across the globe. To date[2] there are 47.5 million cases and almost 1.21 million deaths worldwide (John Hopkins University & Medicine, 2020[9]). The disruption caused is likely to be greater than that of the Great Depression of the 1930s, threatening to knock USD 9 trillion off global GDP over the next two years (IMF, 2020[10]). Extreme poverty is expected to increase for the first time since 1998 (The World Bank, 2020[11]).

The crisis and subsequent recovery will be the defining context for the global economy and development for at least the next two years, and likely well beyond this. Financing needs of emerging economies and developing countries to address the humanitarian, social and economic costs of the crisis will increase, while their own resources will decrease. Downturns across economic sectors – from industrial production, to extractive industries, trade, transport, tourism and others (World Bank/IMF, 2020[12]) – will curb government revenues. In March alone, there was a record level of capital outflows with USD 83 billion removed from emerging markets (IMF, 2020[10]). Initial OECD analysis estimates that external private finance to low and middle-income countries could decrease by around USD 700 billion – a drop 1.6 times larger than after the 2008-09 global financial crisis (OECD, forthcoming[13]). Combined with pressures for higher government spending to fight the crisis, public debt levels will increase, including in countries that were already heavily indebted before the pandemic.

The mobilisation of commercial capital remains central for the recovery from COVID-19, but could become more challenging as immediate crisis containment measures raise risk premiums. As government balance sheets in Brazil and other countries are increasingly strained, it is policy responses that define priorities for the recovery and that can enhance investor confidence and promote private sector engagement more broadly. The fundamentally changed conditions in many sectors underline the relevance of investment policy reform to effectively mobilise commercial finance. Additionally, experiences and lessons learned from blended finance approaches will be helpful to mobilise commercial finance at scale to power the recovery from COVID-19.

Blended finance needs to be part of market building support to be transformational

Blended finance aims to shift the risk-return profile of projects to mobilise commercial capital in countries and sectors that require additional financing. The use of concessional development finance is not a prerequisite in blending – and should, when used, be minimised and well-targeted to avoid market distortion[3] – as development finance providers bring other benefits to a project, such as reputation, expertise and networks in developing countries, that can be of direct financial value for commercial investors (OECD, 2018[8]). Despite being time-bound and project-specific, an ambition of market building is required for blended finance to fully harness its potential and transform broader flows of commercial capital. Blended finance should thus accompany efforts at the policy and regulatory level to promote local

[2] As of 04 November 2020

[3] Minimum concessionality is at the core of the OECD DAC Blended Finance Principle 2. Further background and guidance on this can be found in the Detailed Guidance Note on Principles 2. How to determine minimum concessionality for a blended finance transaction is an ongoing debate amongst practitioners and an area where further work is required (OECD, 2020[204]).

financial markets development and enable stand-alone commercial investment in the long-run.[4] It is in this sense that blended finance for climate action is critically important. Investment opportunities in e.g. decentralised generation, forest conservation or climate-smart agriculture projects with long-term growth potential do exist, but they continue to compete in contexts that favour incumbent technologies and business-as-usual practices that are often incompatible with sustainable development.

A wide and diverse set of actors employs a range of blended finance instruments and mechanisms

A wide range of actors are active in the blending space, with different mandates and motivations. Other than development actors, commercial actors – such as institutional investors, private equity and venture capital funds, banks and corporations – are emerging as important actors, alongside philanthropic organisations. While development agencies and ministries have a development-oriented mandate, and commercial actors have a profit-making motivation in blended finance, development banks and DFIs are usually governed by the dual mandate of delivering sustainable development outcomes while generating financial returns. Multilateral development banks (MDBs), and bilateral development banks and DFIs are to date the most prominent actors in blending, but emerging economy and developing country NDBs are emerging as critically important players. Section 2.3 explores comparative advantages of different types of development finance actors in more detail. In terms of end-beneficiaries of blended finance activities, investees are a diverse group of actors, including e.g. sovereign entities, SMEs, special purpose vehicles (SPVs), and financial institutions or intermediaries serving as a conduit for downstream financing to local private actors.

Several financial instruments can be used in blending transactions to alter risk-return profiles of projects in emerging economies and developing countries and attract commercial investment that otherwise would be deployed elsewhere (see Box 2.2) (OECD, 2018[8]). Blended finance instruments in turn can be structured together through blended finance mechanisms such as blended finance funds, syndication, securitisation and public-private-partnerships (PPPs). While such blended finance mechanisms are often complex transactions requiring time, capacity and coordination across different actors, they can significantly reduce transaction costs and barriers from commercial investors. Different instruments and mechanisms serve different purposes and should be deployed depending on the specificities of a given transaction, the nature of the risks to be mitigated and the project's development objective. Section 2.2 outlines the use of different blended finance instruments by multilateral and bilateral development actors in Brazil, and chapter 4 includes case studies of different blended finance instruments employed by Brazil's domestic DFIs.

Box 2.2. Instruments used to mobilise private finance by official development finance interventions

Data collected by the OECD-DAC includes reporting on the amounts mobilised from the private sector by official development finance through six instruments:

- **Guarantees** refer to legally binding agreements under which the guarantor agrees to pay part or the entire amount due on a loan, equity or other instrument in the event of non-payment by the obligor or loss of value in case of investment. The term guarantee refers to both guarantee and insurance scheme.
- **Syndicated loans** are defined as loans provided by a group of lenders (called a syndicate) who

[4] This is at the core of the OECD DAC Blended Finance Principle 3 on "tailoring blended finance to local context". The Detailed Guidance Note on Principle 3 provides practical recommendations and guidance to put this Principle into practice (OECD, 2020[203]).

work together to provide funds for a single borrower. The main objective is to spread the risk of a borrower default across multiple lenders, and thereby encourage private participation.

- **Shares in Collective Investment Vehicles (CIVs)** are those invested in entities that allow investors to pool their money and jointly invest in a portfolio of companies. A CIV can either have a flat structure – in which investment by all participants has the same profile with respect to risks, profits and losses – or have its capital divided in tranches with different risk and return profiles, e.g. by different order of repayment entitlements (seniority), different maturities (locked-up capital versus redeemable shares). CIVs can be close or open-ended; close-ended CIVs have a limited time period during which new investments in the CIV may be made (fundraising period), while open-ended CIVs can issue and redeem shares at any time.
- **Direct investment in companies** refers to on-balance sheet investments in corporate entities which are conducted without any intermediary (e.g. a CIV) and which typically consist of or combine equity, mezzanine finance and senior loans.
- **Credit lines** refer to a standing credit amount which can be drawn upon at any time, up to a specific amount and within a given period of time. Borrowers decide how much of the agreed funding they wish to draw down and interest is paid only on the amount which is actually borrowed and not on the amount made available.
- **Simple co-financing arrangements** refer to various business partnerships, B2B programmes, business surveys, matching programmes and similar, but also results-based approaches.

Note: The Blended Finance Primer in Annex A provides further background on blended finance instruments and mechanisms.
Source: (OECD DAC, 2020[14]), DAC methodologies for measuring the amounts mobilised from the private sector by official development finance interventions, https://www.oecd.org/dac/financing-sustainable-development/development-finance-standards/DAC-Methodologies-on-Mobilisation.pdf

Blended finance needs to follow a common framework and good practices to achieve sustainable development outcomes

Different uses of the term 'blended finance' even among development finance providers rendered a common framework indispensable to develop priorities, good practice and co-ordinated policy approaches for blending. In 2017, the OECD DAC endorsed the Blended Finance Principles, providing a regulatory framework for donors in designing effective blended finance approaches (OECD DAC, 2018[15]). In 2018, the leaders of the G7 pledged to implement the OECD-DAC Blended Finance Principles to promote transparency and accountability of blended finance operations (G7, 2018[16]). In September 2020, the OECD DAC approved the Blended Finance Guidance to support donors and other actors to effectively design and implement blended finance programs, in line with the Blended Finance Principles (OECD DAC, 2020[17]). Further background on definitions and the Blended Finance Principles can be found in the Blended Finance Primer in Annex A. Further promoting the effectiveness of the blended finance market through co-ordination is the Tri Hita Karana (THK) Roadmap for Blended Finance, a platform of exchange on good practice examples among governments, MDBs and bilateral DFIs, the private sector, civil society organisations (CSOs) and think tanks.

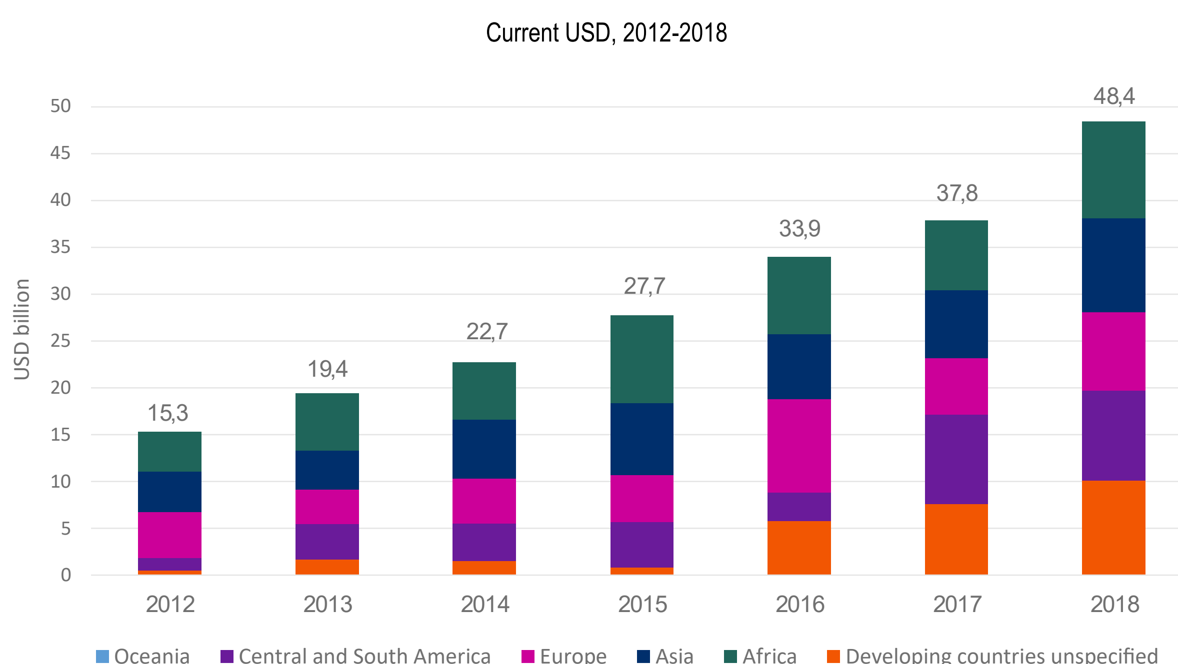
2.2. The state of blended finance: A focus on international development finance and Brazil

Private finance mobilised is on an upward trend, with Central and South America recently attracting the largest volumes

Official development finance interventions[5] mobilised a total of USD 205.2 billion from the private sector over the period of 2012-18 (Figure 2.1). While private finance mobilised increased on an annual basis throughout the period, it significantly accelerated in 2017 (28% year-to-year growth), peaking at USD 48.4 billion in 2018.

Figure 2.1. Private finance mobilised by official development finance, across regions

Current USD, 2012-2018



Source: (OECD DAC, 2020[18]), Amounts mobilised from the private sector for development, http://www.oecd.org/development/stats/mobilisation.htm

Although the region Central and South America[6] was among the least targeted regions until 2016, it experienced a substantial increase in private finance mobilised in the following years (Figure 2.1). In 2017 and 2018, the region attracted the largest volume of private capital mobilised by official development finance, with a peak of USD 9.5 billion in 2017 (25% of private finance mobilised by official development

[5] The definition and methodology used in the OECD-DAC data collection on the amounts mobilised from the private sector by official development finance interventions can be found in Annex B. Official development finance interventions include both Official Development Assistance (ODA) and Other Official Flows (OOF) from those institutions that report to the OECD.

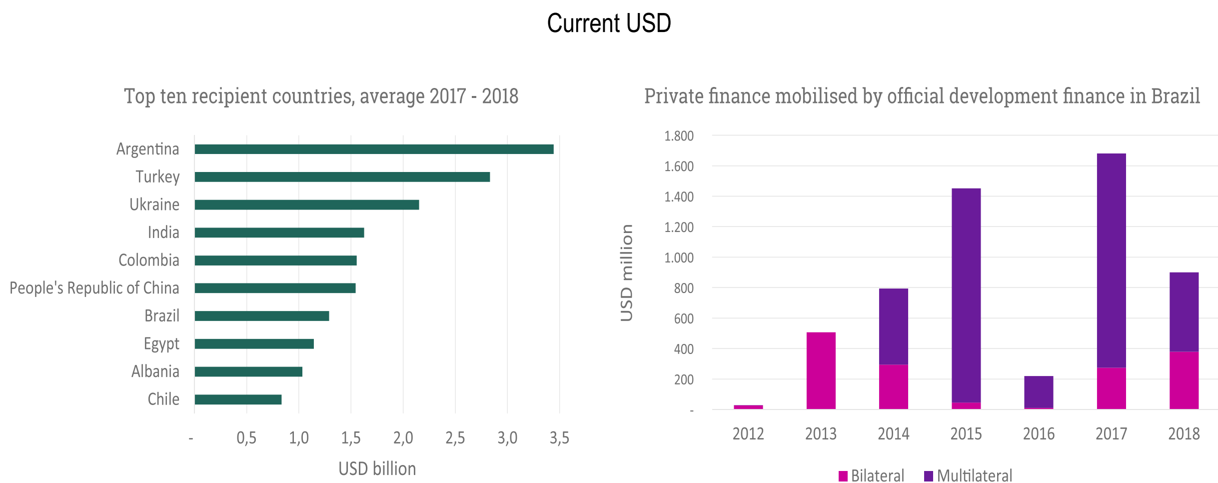
[6] The analysis on Central and South America is based on the country classification uniformly used by DAC members, multilateral donors, non-DAC donors and private donors that report to the OECD DAC. More information can be found here: http://www.oecd.org/dac/financing-sustainable-development/development-finance-standards/dacandcrscodelists.htm

finance globally). At the same time, countries in Central and South America received limited volumes of ODA and substantial amounts of non-concessional development finance, as markets are increasingly advanced and conditions for crowding in private finance are increasingly favourable (OECD, 2020[19]). Similar evidence emerges from the 2018 OECD Survey on Blended Finance Funds and Facilities: Blended finance vehicles invested about 20% of their assets under management (AUM) in Central and South America (Basile and Dutra, 2019[20]). According to data from Convergence, the region of Latin America and Caribbean (LAC)[7] accounted for 13% of all blended finance transactions in 2016-2018 (Convergence, 2019[21]). The size of transactions in LAC has considerably increased over time, from a median of USD 49.5 million in 2010-2012 to USD 115 million in 2016-2018 (Convergence, 2019[21]).

Upper-middle income countries (UMICs) attracted 41% of total private capital mobilised (USD 17.5 billion) on average over 2017-18, compared to 5% (USD 2.2 billion) flowing to Least Developed Countries (LDCs) (OECD, 2020[22]). As an UMIC, Brazil is among the top ten recipients of private finance mobilised from official development finance interventions, after Argentina, Turkey, Ukraine, India, Colombia and the People's Republic of China (Figure 2.2).

Figure 2.2. Private finance mobilised in the top ten recipients, and private finance mobilised by different development actors in Brazil

Current USD



Source: (OECD DAC, 2020[18]), Amounts mobilised from the private sector for development, http://www.oecd.org/development/stats/mobilisation.htm

OECD-DAC data shows that over the period of 2012-2018, a total of USD 5.6 billion of private finance was mobilised through official development finance for deployment in Brazil. Figure 2.2 shows that private finance mobilised fluctuated substantially in this period, increasing steadily from 2012 (USD 29 million) to 2015 (USD 1.4 billion), before experiencing a sharp drop in 2016 (USD 219 million). The drop is likely the result of a combination of factors, including changes of data disclosure policies and the prolonged recession of Brazil that intensified in 2016 (IMF, 2016[23]). In 2017, private finance mobilised by official development finance in Brazil peaked at almost USD 1.7 billion, driven by a large energy-related project of multilateral providers. In 2018, private finance mobilised decreased to USD 900 million. These variations

[7] Convergence follows the World Bank Group regional classification, that differs from the OECD-DAC regional classification as it includes a few countries that are not ODA-eligible, such as Aruba, Bahamas, Barbados, British Virgin Islands, Cayman Islands, Chile, Curacao, Puerto Rico, Sint Maarten (Dutch part), St. Kitts and Nevis, St. Martin (French part), Trinidad and Tobago, Uruguay, Virgin Islands (U.S.) (World Bank, 2020[195]); (OECD DAC, 2020[196]).

reflect the fluctuating nature of private investment more generally, as well as the lack of a pipeline of bankable local projects contributing to sustainable development and climate.

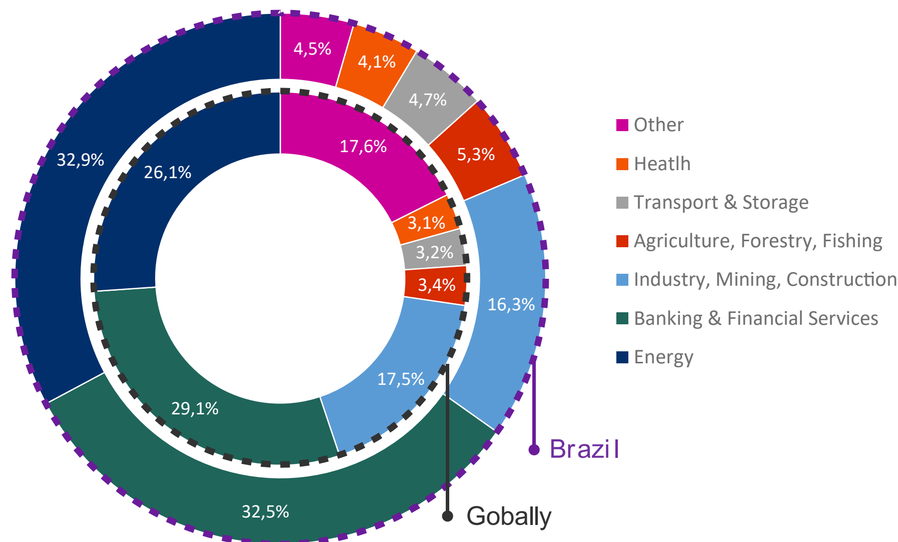
While in 2012 and 2013, bilateral development finance providers were the most prominent actors in Brazil, multilateral providers have taken centre stage in Brazil since 2014 (Figure 2.2). In 2017-2018, multilateral providers mobilised on average over 70% of total private capital mobilised by official development finance interventions in the country. This is consistent with the trend observed at the global level, where multilateral institutions have mobilised the largest volumes of private capital.

From OECD data on private finance mobilised, it also emerges that the number of transactions in Brazil follows a trend of positive growth from 2012 to 2018, with a drop in 2016. Over the same period, the average transaction size in Brazil amounted to USD 83.6 million, higher than the average size across UMICs (USD 61 million). Average transaction sizes fluctuated substantially as well, with a peak of USD 210 million in 2017.

Private finance mobilised in Brazil is concentrated in the energy and banking and financial services sectors

Over the period of 2012-2018, the energy and banking and financial services sectors were the largest destination sectors for private finance in Brazil, each of them accounting for around 33% (USD 1.8 trillion) of total private finance mobilised by official development finance interventions in the country (Figure 2.3). It should be noted that not all transactions in the energy sector are in the area of 'green' or 'sustainable energy' and that the data does now allow for further disaggregation. Funds mobilised in the banking and financial sector are often on-lend by local financial institutions to local businesses and households with restricted access to finance. This can support the development of domestic financial systems and strengthen the inclusiveness of local financial institutions.

Figure 2.3. Private finance mobilised by official development finance, by sector



Source: (OECD DAC, 2020[18]), Amounts mobilised from the private sector for development, http://www.oecd.org/development/stats/mobilisation.htm

Industry, mining and constructions was the third largest recipient sector, mobilising USD 906 million or 16% of all private finance mobilised in Brazil. While the energy, banking and financial service, as well as

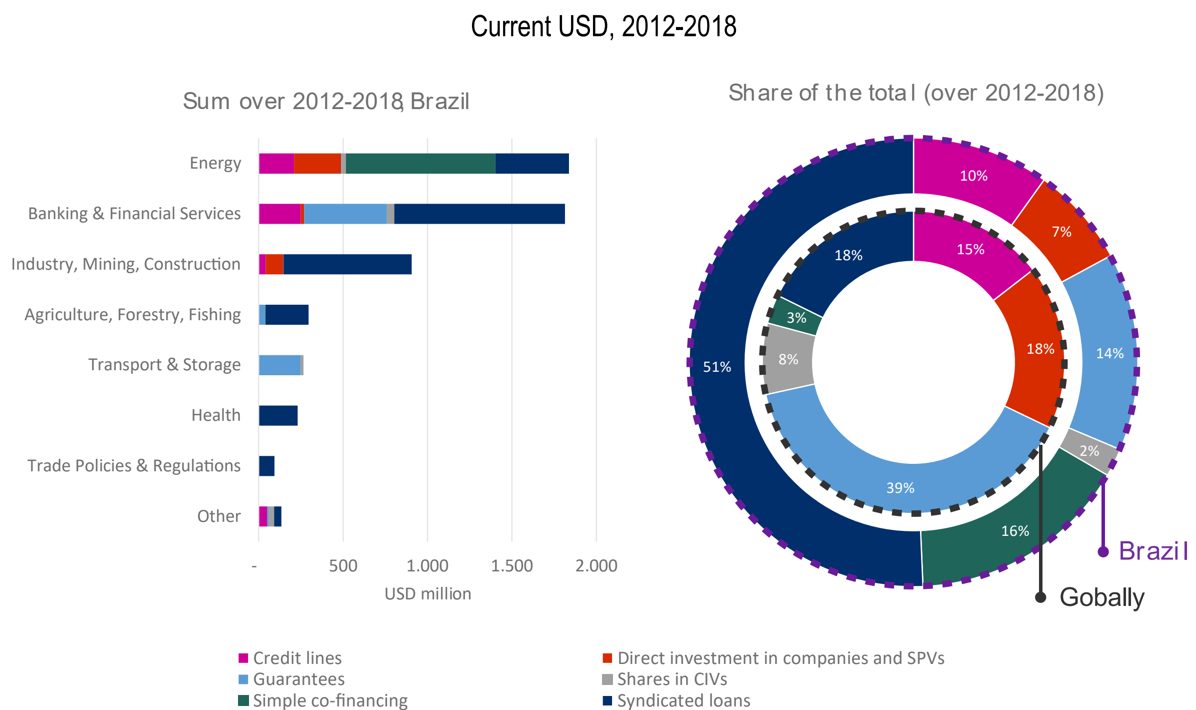
industry, mining and construction sectors are consistently amongst the top recipients of private finance mobilised in emerging economies and developing countries, Figure 2.3 shows that this sectoral allocation is even more concentrated in Brazil, where they accounted for 82% compared to 73% globally. Other large recipient sectors in Brazil are agriculture, forestry and fishing, transport and storage, and health. The share of private capital mobilised for the health sector was slightly higher in Brazil (4.1%) compared to the global share (3.1%).

Syndicated loans mobilised the largest share of private finance in Brazil, followed by co-financing and guarantees

Syndicated loans mobilised over half of the total volume of private finance for Brazil over the period of 2012-2018, compared to a much lower share (18%) globally (Figure 2.4). Syndicated loans are also the most prominent leveraging mechanisms for the banking and financial services sector in Brazil, while in the energy sector, standard loans and grant provision in co-financing schemes mobilised the largest shares of private finance. Across sectors, simple co-financing mobilised a much larger share of private finance for Brazil (16%) than at the global level (3%).

Figure 2.4. Private finance mobilised by official development finance, by instrument

Current USD, 2012-2018



Source: (OECD DAC, 2020[18]), Amounts mobilised from the private sector for development, http://www.oecd.org/development/stats/mobilisation.htm

While guarantees have mobilised the largest share of private finance globally (on average 39% over the period of 2012-2018), they mobilised only 14% of private finance in Brazil (Figure 2.4). Further analysis shows that the use of guarantees in Brazil was constrained only to the banking and financial services and transport and storage sectors, for projects in 2013 and 2018 only. In 2018, a single deal in the transport sector using guarantees drove this instrument to mobilise half of private capital through development finance interventions for Brazil. Experiences with the use of guarantees could be valuable in the recovery from COVID-19 as initial evidence highlights that, globally, demand for guarantees grew since the onset

of the crisis. Direct investment in companies and SPVs have an established track record internationally (18% of private finance mobilised by official development finance interventions) but only constitute 7% of private finance mobilised in Brazil.

2.3. The role of domestic development banks in mobilising commercial capital for sustainable development

The financing for development landscape has changed significantly over the last two decades, with the largest volumes of financing now originating domestically, especially in emerging economies (OECD, 2018[3]). Additionally, domestic development banks such as NDBs are increasingly rising to the forefront of international discussions on blended finance that previously concentrated mostly on MDBs and bilateral development banks and DFIs (OECD, 2019[24]). This subsection explores (i) the ecosystem of development banks and DFIs and (ii) the comparative advantages of domestic development banks for mobilising commercial capital.

Development banks form an ecosystem of heterogeneous institutions

Considering the scale of financing required, development banks and DFIs – publicly owned or controlled financial institutions with a specific development mandate – are essential in helping emerging economies and developing countries deliver on their development needs. While differences in size, geographical coverage and scope of operations exist, the common value-added of development banks is four-fold (OECD/The World Bank/UN Environment, 2018[25]); (OECD, 2018[8]):

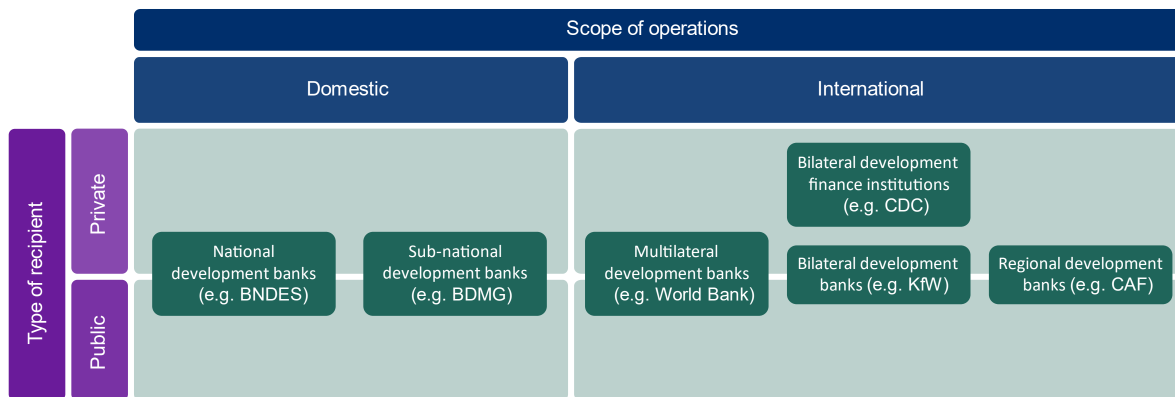
- **Financing**: Development banks provide concessional and non-concessional finance for projects in emerging economies and developing countries. These projects can provide a proof-of-concept for technologies, investments and business models in new markets.
- **Mobilising**: Development banks increasingly mobilise commercial capital for development projects by improving risk-return profiles of projects. They also act as intermediaries in blending finance from donor governments and commercial investors to scale up commercial investment for development projects.
- **Influencing policies and creating markets**: Development banks can catalyse broader flows of finance and investment by supporting governments in e.g. reforming investment policies, removing specific barriers to investment and stimulating the creation of markets that promote sustainable economies and societies. They also support governments in developing project pipelines and bringing projects to bankability through targeted project development support.
- **Building capacity** for public and private actors: Development banks can work with local public and private financial institutions to develop and promote targeted financial products and services that can help build local markets and deliver on development priorities. As a part of capacity building, they are increasingly demonstrating the financial value-add of aligning finance with the SDGs and the Paris Agreement.

Figure 2.5 provides a stylised mapping of the system of development banks and DFIs with a focus on three types of actors. To harness the full potential of development banking in bridging the SDG investment gap, it will be essential for development banks and DFIs to be effective as a system and to capitalise on the comparative advantages of different types of institutions.

Multilateral and bilateral development banks are widely recognised as critical providers of finance and technical assistance to promote development in partner countries. Multilateral and bilateral development

banks have both public and private sector operations[8], while bilateral DFIs engage in financial service provision to the private sector only[9]. The strong credit ratings of internationally operating development banks and DFIs, the support they enjoy from shareholder governments, and the ability to draw from knowledge and experience from different regions is a distinct value-add of these institutions, including for the blending space.

Figure 2.5. A map of the system of development banks and DFIs along operations and recipients



Source: Adapted from OECD/The World Bank/UN Environment (2018[25])

Worldwide, over 250 NDBs exist, and while their focus is mostly on domestic operations, their collective financial footprint (USD 5 trillion in AUM) is significant larger than that of internationally-operating MDBs (USD 1 trillion) (Gallagher and Kring, 2017[26]). Some of the larger NDBs hold assets that correspond to a significant share of national GDP – and paired with their mandates, these assets enable NDBs to influence development pathways according to set government priorities (OECD/The World Bank/UN Environment, 2018[25]); (OECD, 2019[24]). For example, BNDES held BRL 802.5 billion of assets in 2018 (approximately USD 219.6 billion[10]), that corresponded to about 11.6% of Brazil's GDP in the same year[11] (BNDES, 2018[27]). While some countries have a single NDB, others established a system of NDBs and/or sub-national development banks that target specific industries, market segments and/or regions within a country. In India for example, five different NDBs promote either small and medium-sized enterprises (SMEs), industry, agriculture, housing or infrastructure. Similarly, Brazil has a multi-layered system of development finance in place, which is further explored in section 3.2.

NDBs have received renewed attention in particular after the 2007-2008 financial crisis when they provided significant countercyclical lending to compensate for shrinking private financing. In light of the unprecedented economic crisis caused by the COVID-19 pandemic, NDBs' role as countercyclical

[8] With the exception of e.g. the International Finance Corporation (IFC) within the World Bank Group.

[9] This description of DFIs is taken from the OECD, i.e. "national and international development finance institutions (DFIs) are specialised development banks or subsidiaries set up to support private sector development in developing countries. They are usually majority-owned by national governments and source their capital from national or international development funds or benefit from government guarantees. This ensures their creditworthiness, which enables them to raise large amounts of money on international capital markets and provide financing on very competitive terms" (OECD, 2020[205]). This definition of DFIs is mostly applicable to donor country DFIs that will differ from the terminology of Brazilian DFIs used in the latter part of this paper.

[10] This and other currency conversion in this report are calculated using OECD exchange rates (OECD, 2020[198]).

[11] Calculated using GDP in current local currency units (World Development Indicators) (World Bank, 2018[199])

financiers will be critical to support the recovery from COVID-19 (Griffith-Jones, Marodon and Ocampo, 2020[28]).

Domestic development banks are to date underutilised in bridging the sustainable development investment gap

Independent of the size of individual institutions and their scope of operations, domestic development banks have specific comparative advantages over internationally operating counterparts, including for blending and bridging the SDG investment gap (Abramskiehn et al., 2017[29]); (OECD, 2019[24]); (IDB, 2019[30]); (Griffith-Jones, Attridge and Gouett, 2020[31]):

- **Proximity to local markets and embeddedness in the national context**. Domestic development banks are closer to local financing, policy and development context in their country of operation. This proximity often allows domestic development banks to more readily target projects with high sustainable development impact. In particular sub-national governments and municipalities are easier reached by domestic institutions, in particular sub-national development banks.
- **Providing financing in local currency**. Domestic development banks provide financing in local currency which can support local capital market development, including through the mobilisation of additional, local commercial capital.
- **Sectoral expertise**. In many cases, domestic development banks have a narrow policy mandate focusing on a specific sector or type of client (e.g. SMEs) and benefit from long-standing and specialised expertise in managing sector or client-specific risks. Moreover, they can focus their activities on specific market gaps (World Bank Group, 2018[32]).

Despite these comparative advantages, domestic development banks remain to date an underused conduit for the mobilisation of commercial capital and as intermediaries of international climate finance – for reasons internal and external to them, and despite their comparative advantages. For example, climate finance from most multilateral funds flows through MDBs and United Nations agencies, largely bypassing NDBs (although a number of NDBs have recently been accredited to the Green Climate Fund that focuses on direct national access). Capacity limitations in meeting fiduciary and environmental and social standards, and/or developing new financing vehicles can at times limit their inclusion in the international development and climate finance architecture, as well as in blending arrangements. At the same time, an increasing body of literature underscores the critical role of NDBs in bridging in particular the investment gap for low-emissions, climate-resilient infrastructure (OECD, 2017[6]); (Abramskiehn et al., 2017[33]); (IDB, 2017[34]); (OECD/The World Bank/UN Environment, 2018[25]); (Morris, 2018[35]); (GIZ, 2019[36]); (IDB, 2019[37]); (OECD, 2019[24]); (Griffith-Jones, Attridge and Gouett, 2020[31]). Addressing the capacity limitations of domestic development banks will further expand the potential role of these institutions in bridging the SDG investment gap.

Domestic development banks also work with international financial institutions to channel development finance to local development projects. Examples of co-operation include e.g. BNDES and Germany's KfW or BDMG and the European Investment Bank and highlight that development banks are – at least to some extent – already operating within a system.

While evidence on the critical role and comparative advantages of domestic development banks is increasingly available, this research is often limited to individual NDBs in different countries. However, many emerging economies and developing countries, including Brazil, have several domestic development banks and other DFIs with differing mandates in terms of e.g. sectors, target groups and regions. At the time of writing, research on national systems of development banking was unavailable and therefore no information and evidence was available on how domestic development banks can capitalise on different institutions' strengths and work effectively as a system.

3. Overview of Brazil's development priorities and its national system of domestic DFIs

In brief

- Brazil's development priorities include decreasing levels of public debt, reducing poverty and inequality and increasing the employment rate. Mobilising commercial capital for e.g. sustainable infrastructure investment can support these priorities, and further aligning growth and climate agendas can benefit growth in the current crisis context and beyond.
- At the same time, the country is highly decentralised and development priorities differ across states. Brazil's multi-layered system of development banking emerged from this diversity. There are six different types of domestic DFIs, with different mandates, governance and scope of operations, e.g. both national and sub-national institutions.
- BNDES is the main funding source of many DFIs, but DFIs are increasingly looking to diversify their access to capital as a result of changes in BNDES' funding model. In doing so, they are turning to capital markets, holding potential to advance the blended finance agenda in Brazil.
- BNDES and BDMG, the development bank of the state of Minas Gerais, are already engaging in blending. They are of differing size and have different scope of operations, but both institutions have recently begun to establish green finance in their business models.

3.1. Country profile and development priorities

High levels of public debt as the need for resources is widening

High levels of public debt and high budget deficits followed by, pre-COVID-19, a policy of fiscal consolidation has shaped fiscal policy in Brazil since 2016. In 2014, the primary budget balance, which excludes interest payments, turned negative and the 2015-16 recession further deteriorated the countries' fiscal situation (OECD, 2018[38]). From 2015 to 2019, public debt increased from 51% of GDP to 76% of GDP, exposing the country to debt sustainability risks (Flamini and Soto, 2019[39]); (OECD, forthcoming[40]). Projections of public debt to GDP exceed 100% by 2025 (OECD, forthcoming[40]), even before the outbreak of the COVID-19 crisis and corresponding increases in public spending across the world to address the pandemic and its effects. The 20-year public spending ceiling installed in 2016 reflected challenges related to the sustainability of public debt and left limited space for development spending. It was temporarily suspended in May 2020 to enable the government to address the pandemic's effects (Poder Legislativo, 2020[41]). Pressures on key development sectors, such as health, to contribute to reduced government

spending (Flamini and Soto, 2019[39]) could have exacerbated impacts of the pandemic in Brazil, and in particular the country's vulnerable populations (OHCHR, 2020[42]).

As for many other countries and the world economy more broadly, Brazil faces a recession in 2020 (IMF, 2020[43]). Lower government revenues as a result of the economic downturn, paired with increased public expenditure to support rescue and recovery measures will place an additional burden on government debt levels. In addition to public investment, policy responses will shape the recovery from the COVID-19 crisis, and they will be particularly essential in channelling commercial capital to recovery priorities once immediate COVID-19 containment priorities abate.

Brazil is highly decentralised, and states have different development priorities

Brazil has a federal system with 26 states and one federal district. The federal structure allows for a high degree of decentralisation and targeted measures to address specific region's development needs. Sub-national governments play a significant role in public spending and account for over half of total public spending – in line with OECD members with a similar federal set-up (IMF, 2019[44]). Despite the high degree of fiscal decentralisation, several rounds of bailouts of highly indebted states on part of the federal government defined intergovernmental relations over the past 30 years. Understanding the distribution of public debt on the one hand, and sub-national development priorities on the other hand is crucial to address the development investment gap across the country in a sustainable manner.

Federal government transfers and revenue composition vary across different regions. States in the North and Northeast (e.g. Acre, Amapá and Roraima) with lower GDP per capita receive transfers corresponding to two-thirds of total revenue. Other states depend for less than one-fifth of their revenue on transfers and receive higher revenue autonomy. Two-thirds of sub-national debt is concentrated in the Southeast region, namely the states of Minas Gerais, Rio de Janeiro and São Paulo (IMF, 2019[44]). The previous recession of 2015-16 halted the decade-long progress in income convergence and inequality reduction across and within states (Góes and Karpowicz, 2017[45]), and the country's poorest North and Northeast regions risk to fall further behind as a result of their limited ability to address the COVID-19 crisis (The Brazilian Report, 2020[46]). The crisis and subsequent recovery will be the defining context for Brazil's federal and sub-national governments. Restoring capacity to invest in socio-economic objectives will require policy responses at national and sub-national levels that mobilise private sector capital for these outcomes.

Recent rise in poverty make reducing regional and social disparities a priority, but the COVID-19 crisis and climate change threaten progress

Poverty in Brazil has declined dramatically, decreasing from 13.4% of the population living on under USD 1.90 per day in 1999 to 2.8% in 2014 (World Bank, 2019[47]). As mentioned above, the recession of 2015-16 resulted in an increase in poverty as the poorest suffered disproportionately from job losses and compressed disposable incomes (Góes and Karpowicz, 2017[45]). Progress in decreasing inequality achieved between 2001 and 2014 are estimated to have been reversed between late 2014 and June 2018 alone (FGV Social, 2018[48]). The full effects of COVID-19 on poverty in Brazil are still unfolding but it is already apparent that the poor and most vulnerable are hit disproportionately by the pandemic and its attendant economic crisis. Further, temperature increases and decreased precipitation due to climate change are expected to decrease agricultural productivity and in turn increase income inequality (Magrin et al., 2014[49]); (USAID, 2018[50]). Negative impacts on health outcomes due to climate change are expected to further exacerbate poverty and income inequality and decrease productivity across economic sectors in Brazil's Northeast region (Magrin et al., 2014[49]). While climate action, and in particular climate change adaptation, is an important element to poverty and inequality reduction, the protection of natural ecosystems can have both positive and negative impacts on livelihoods in the short-term. These impacts should be considered especially in areas with high poverty rates (Jung et al., 2017[51]).

High levels of unemployment persist and risk to be exacerbated by the COVID-19 crisis

Unemployment rose significantly during the recession of 2015-16 and remained elevated at 11.9% in 2019 (ILOSTAT, 2019[52]). Youth unemployment is particularly pronounced and unemployment for women is above the national unemployment rate. Increasing employment is accordingly a key priority, which the government aims to address through innovation promotion, increased credit availability and tax reform (Presidência da República, 2019[53]). The COVID-19 crisis is likely to exacerbate unemployment trends from Brazil's previous economic recession and disproportionately affect micro, small and medium-sized enterprises (MSMEs), which employ the majority of the labour force (see also Box 2.1 on page 13). Infrastructure investment has historically been a conduit for job creation, in particular during economic contraction (Raiser et al., 2017[54]). As governments across the globe are considering measures to promote employment during the COVID-19 crisis, an emphasis on sustainable, green jobs, including through infrastructure investment, features strongly in international discussions (ILO, 2020[55]).

Infrastructure faces significant financing gaps that hamper growth

Inadequate infrastructure is a key structural obstacle to growth and sustainable development in Brazil (OECD, 2018[38]). Since the 1980s, infrastructure investments in the country declined, and in 2011-2015 reached levels that only broke even with the estimated rate of natural depreciation (the amount that infrastructure decreases in value over time) at 3% of GDP (Dutz, 2018[56]; Global Infrastructure Hub, 2019[57]). With this rate, Brazil trails behind other BRICS[12] economies, where infrastructure investment averaged 4.1% of GDP in the same period. Projections indicate that Brazil faces a USD 1.2 trillion gap between current investment trends for infrastructure and the amount required to match infrastructure quality in peer countries by 2040 (Global Infrastructure Hub, 2019[58]).

Investment gaps are particularly significant in energy, transport, and water and sanitation, and climate change impacts could further lead to losses of infrastructure assets (Table 3.1). For example, hydropower plants are highly vulnerable to climate change impacts as changes in rainfall patterns can decrease the productive capacity and viability of these plants (Rodrigo de Queiroz et al., 2019[59]). (Whittington and Gundry, 1998[60]; GFDRR, 2017[61]). To achieve energy security in Brazil, sources will need to be consumed sustainably (Sovacool and Brown, 2010[62]) and adaptation to climate change impacts such as precipitation variability, increased droughts and flooding needs to be considered in energy infrastructure planning. Additionally, Brazil's energy and transport infrastructure risks asset losses due to river, urban and coastal floods, and water security is threatened by elevated risk of droughts (GFDRR, 2017[61]). Overall, climate change impacts place disruption risks on infrastructure services that can lead to negative health outcomes, lower productivity and other economic costs (Hallegatte, Rentschler and Rozenberg, 2019[63]).

Table 3.1. Investment gap and potential climate impacts by type of infrastructure

Type of infrastructure	Annual investment gap in Brazil (2020-24 avg.)	Potential direct impacts of climate change in Brazil	Potential indirect impacts of climate change on infrastructure service disruptions for users (globally)
Energy	USD 7.2 billion	- Increased drought and precipitation variability risks changes in river flow that decrease the productive capacity of hydropower resources - Increased chance of flooding risks asset loss for related infrastructure, particularly near rivers and coastlines	- Diminished well-being - Lower productivity of family firms - Increased mortality and morbidity from lack of access to health care or air-conditioning during heat waves

[12] I.e. Brazil, Russia, India, China and South Africa.

Transport	Port	USD 2.3 billion	- Coastal flooding and tsunamis risk asset loss	- Loss of time from increased congestion - Increases in fuel costs - Health impacts of air pollution - Constrained access to jobs, markets, services
	Rail	USD 3.5 billion	- Flooding risks asset loss, particularly near rivers and coastlines	
	Roads	USD 28.0 billion	- Flooding risks asset loss, particularly near rivers and coastlines	
Water and sanitation		USD 2.0 billion	- Drought places risks on water security - Flooding risks asset loss	- Diminished well-being and loss of time - Higher incidences of waterborne diseases

Note: Estimated investment gap for water and sanitation and energy includes finance required to achieve SDG targets. The impacts of climate change listed in the table are not comprehensive.

Source: Authors' based on (Global Infrastructure Hub, 2019[57]) for investment gap figures, (GFDRR, 2017[61]) for potential direct climate impacts and (Hallegatte, Rentschler and Rozenberg, 2019[63]) for infrastructure service disruptions.

Studies show that investment in climate-resilient infrastructure is not necessarily more cost-extensive (OECD, 2017[6]); (Hallegatte, Rentschler and Rozenberg, 2019[63]), and that failure to account for climate and related stranded asset risks in infrastructure can seriously strain public finances, jeopardise sovereign credit rating and governments' ability to pursue sustainable development (CPI, 2019[64]). Additionally, as investors become increasingly sensitive to stranded asset risks and channel their resources into sustainable projects, Brazil stands to benefit from the promotion of sustainable infrastructure.

Climate change policy emphasises alignment of economic and social development

Many of the objectives laid out in Brazil's PPA can benefit from efforts to promote a low-emissions, climate-resilient development pathway (IPCC, 2018[65]; OECD, 2019[7]). For example, climate modelling suggests that droughts and floods will impact the economically deprived Northeastern region of Brazil most severely, such that insufficient efforts to adapt to climate change impacts in this region alone could aggravate inequality in Brazil (Tebaldi and Beaudin, 2016[66]). Additionally, investment in climate-compatible industries and technologies have significantly higher employment creation potential than e.g. the fossil fuel industry, and additionally drive innovation, productivity, competitiveness and economic growth (Garrett-Peltier, 2017[67]; OECD, 2017[6]). According to ILO estimates, the transition to low-emissions, climate-resilient economies can create 18 million net jobs globally and simultaneously support 1.2 billion people (about 40% of the global workforce, that mainly live in emerging economies and developing countries) that depend on direct ecosystem services (2018[68]). Additionally, governments across the globe are increasingly aware of the superior outcomes that a green recovery from the COVID-19 crisis holds for jobs, incomes, growth and development overall. Aligning growth and climate agendas, rather than treating climate as a separate issue, can also benefit growth beyond crises contexts (OECD, 2017[6]).

Brazil's National Policy on Climate Change (*Política Nacional sobre Mudança do Clima, PNMC*), adopted in 2009, recognises this potential and aims at aligning the country's economic and social development with the protection of the climate system (Presidência da República, 2009[69]). Following the general guidance of the PNMC, the government launched the National Plan on Climate Change in 2010 and the National Adaptation Plan to Climate Change in 2016 that are now also framed by Brazil's Nationally Determined Contribution under the Paris Agreement. While Brazil is not within the group of the largest emitters globally, its emissions have increased 40% per capita between 2005 and 2014 (World Bank, 2019[70]). Fully implementing the vision of the PNMC and developing ambitious NDCs can boost economic growth and create positive externalities for socio-economic development in the country.

Research shows that Brazil's NDC entails the opportunity for climate-smart investment in the order of USD 1.3 trillion until 2030, and that domestic DFIs can be critical players in harnessing this potential (IFC, 2016[71]); (Abramskiehn et al., 2017[33]). The example of the energy sector shows that investments are also economically efficient at the macro level: Meeting related NDC targets will require an estimated investment that is almost 10% less than the business-as-usual scenario (CPI, 2018[72]). Taking into consideration the efficient use of public resources, the increasingly favourable performance of green finance instruments

(UNEP Inquiry, 2020[73]), and private sector momentum to divest from high-emitting, climate-vulnerable investment – it will be essential for policy makers and development banks in Brazil to pursue the alignment of climate action with sustainable development. Given the central linkages to both climate action and sustainable development, the promotion of low-emissions, climate-resilient infrastructure will be central to this.

3.2. Brazil's system of domestic development finance institutions

The landscape of Brazil's development finance institutions

As other emerging economies, Brazil has several domestic development banks and DFIs. In contrast to e.g. China, South Africa or India, however, where different development banks have different sectoral focuses, Brazil's domestic development banks and DFIs have both different sectoral and geographic focus. An intricate system of more than 30 financial institutions operating at national and sub-national levels is in place, with some institutions having a development-only mandate and other institutions having a commercial-development mandate. Brazil's development banks and DFIs also differ in their ownership structure and are subject to different regulatory frameworks.

Brazil's system of development finance institutions consists of six types of institutions

The majority of Brazil's development banks and DFIs are members of ABDE. A recent strategic exercise among ABDE members resulted in the categorisation of institutions in Brazil's system of development finance into (i) federal banks, (ii) sub-national development banks, (iii) sub-national development agencies, (iv) sub-national commercial banks, (v) cooperative institutions, (vi) other institutions.

Federal banks have a development and/or commercial mandate and are at least in part owned by the federal government. They include *Banco do Brazil*, a public-privately owned commercial bank; *Caixa*, a commercial bank and the largest federal bank in terms of credit portfolio; *Banco Nacional de Desenvolvimento Econômico e Social* (BNDES), Brazil's only national development bank; *Banco do Nordeste*, originally the development bank of the Northeast region that is now a commercial bank with a development mandate; *Banco da Amazônia*, a development bank of the nine states in the Amazon basin. Federal banks are dependent on public funds, although to a differing degree, and can engage in debt and equity operations.

Sub-national development banks are controlled by the states of their operation, and include the development bank of the state of Minas Gerais (BDMG), the development bank of the state of Espirito Santo (Bandes) and the development bank of three states in the Far South region of Brazil (BRDE). Together, sub-national development banks hold BRL 25.2 billion in assets (USD 6.9 billion).They support the development priorities of their states, but this can include a sectoral focus, as is the case for example with BRDE that focuses on sustainable agriculture. As per the Central Bank regulation No. 394, sub-national development banks are allowed to raise resources from 'third-party resources', including capital markets.

Sub-national development agencies largely operate in states that do not have a sub-national development bank. They can provide the same financial products, e.g. loans, grants, equity, guarantees, as sub-national development banks, but are limited in terms of funding as the collective assets of BRL 10.6 billion (USD 2.9 billion) across all 16 institutions[13] highlight. Sub-national development agencies receive

[13] Sub-national development agencies include Agência de Desenvolvimento de Roraima, Agência de Fomento do Estado do Amazonas, Agência de Fomento do Estado do Amapá, Agência de Fomento e Desenvolvimento do Estado do Piauí, Agência de Fomento do Estado de Tocantins, Agência de Fomento do Rio Grande do Norte, Agência de

part of these funds from BNDES and FINEP and mostly service MSMEs and municipalities. Per the Central Bank regulation No. 2.828, development agencies are not allowed to raise funds on capital markets, but can have direct or indirect shareholdings in private enterprises.

Sub-national commercial banks [14] have commercial mandates and mostly perform banking activities of their governments, such as the management of payrolls of state employees. They are larger in size than their development counterparts (combined BRL 132.2 billion in assets, or USD 36.2 billion), but only have a small development portfolio that is aligned with the state's development priorities.

Cooperative banks[15] are private institutions that support the credit systems of cooperatives. Cooperatives focus mostly on the provision of loans for agricultural activities, but have recently expanded into urban areas. They are the fastest growing institutions in Brazil's system of DFIs (in terms of deposits and outstanding credit), which is supported by the Central Bank in an effort to deconcentrate the market. Cooperative banks are mostly located in the Southern and Southeastern region of Brazil.

Other institutions include FINEP, a government agency that promotes innovation and SEBRAE, a public-private institution dedicated to MSMEs promotion.

ABDE summarises all six types of institutions under the **collective term of 'development finance institution'**, given their provision of finance for development.[16] Accordingly, this terminology will be adopted for these institutions in this paper. The strategic exercise among ABDE members to categorise different types of DFIs reiterated the declared objective to collaborate and engage in complementary action for Brazil's development. In the medium-term, efforts of Brazil's DFIs to promote development will happen in the context of the COVID-19 crisis. Box 3.1 provides a brief outlook on the role of Brazil's domestic DFIs in responding to this crisis.

Box 3.1. The role of domestic DFIs in responding to the COVID-19 crisis

While COVID-19 is an external shock to economic and financial sectors, the Great Lockdown is causing a contraction in demand, supply chain interruptions and unprecedented levels of unemployment – with high uncertainty regarding how long these effects will last. To ensure that poverty and inequality do not increase as a result of the crisis, it is imperative for development banks to support societies and economies in addressing the effects of the pandemic. Indeed, it is the rationale of development banks to overcome market failures and finance structural transformations towards sustainable economies.

Brazil's DFIs will have an especially prominent role in providing countercyclical finance, implementing policy reform and incentivising private sector engagement in the recovery from COVID-19. With more than 160 000 deaths, Brazil is to date[17] the second-worst hit country worldwide (John Hopkins University & Medicine, 2020[9]). OECD estimates forecast a decrease of 7.4% in Brazil's GDP for 2020 if there are

Empreendedorismo de Pernambuco, Agência de Fomento de Alagoas, Agência de Fomento do Estado da Bahia, Agência de Fomento do Estado de Mato Grosso, Agência do Fomento do Estado de Goiás, Agência Estadual de Fomento, Agência de Fomento Paulista, Agência de Fomento do Paraná, Agência de Fomento do Estado de Santa Catarina, Agência de Fomento do Rio Grande do Sul

[14] Sub-national comercial Banks include Banco do Estado do pará, Banco do Estado do Rio Grande do Sul, Banco do Estado do Espirito Santo, Banco do Estado de Sergipe, Banco de Brasilia.

[15] Banco Cooperative do Brasil, Cresol Confederações, Sistema Cooperative de Crédito.

[16] This terminology differs from the OECD definition of DFIs. It is important to note that Brazil's DFIs work both with the public and the private sector, in contrast to e.g. the UK's CDC or France's Proparco that only work with private sector actors and have a sole focus on private sector development in developing countries.

[17] As of 04 November 2020.

no more outbreaks this year, and 9.1% in a double-hit scenario where a second wave occurs in the last quarter of 2020 (2020[74]). Brazil's DFIs have already showcased a capacity for rapid response: ABDE members for example committed cumulative BRL 218.5 billion, more than 12% of GDP, for measures to combat the crisis as of April 2020 (ABDE, 2020[75]). As MSMEs in Brazil tend to be labour-intensive firms that hire most of the informal workforce (ILO, 2014[76]), avoiding bankruptcy for these businesses will be crucial to mitigate the impacts of the crisis. Sub-national development banks in particular can increase efficiency through coordinated alliances between states and the federal government, and ensure that support reaches communities that need it most.

Countries look to increasing domestic economic activities for growth, which can be difficult during a crisis, when resources become increasingly scarce relative to societal needs. Using public finance strategically to create markets and mobilise commercial finance (i.e. trough blended finance) can result in a positive feedback loop that can ultimately also increase tax revenues. Infrastructure investments are likely to be a core element of the recovery, and the environment for such investments is favourable. Brazil has already suspended austerity measures to increase fiscal space, and interest rates set by the Central Bank are at historical lows. These low rates are an opportunity to attract more funds to assets with longer maturities and higher risk, which could spur long-term growth and innovation in infrastructure financing. To promote long-term resilience, it will be important for investments to focus on sustainable infrastructure and not revert to unsustainable infrastructure that have been promoted in the past, but perform unfavourably in terms of pricing and financial viability. As mentioned above, domestic DFIs are natural agents to mobilise commercial capital and promote sustainable infrastructure, including through supporting planning capacity, for the transition of economies and societies towards long-term resilience.

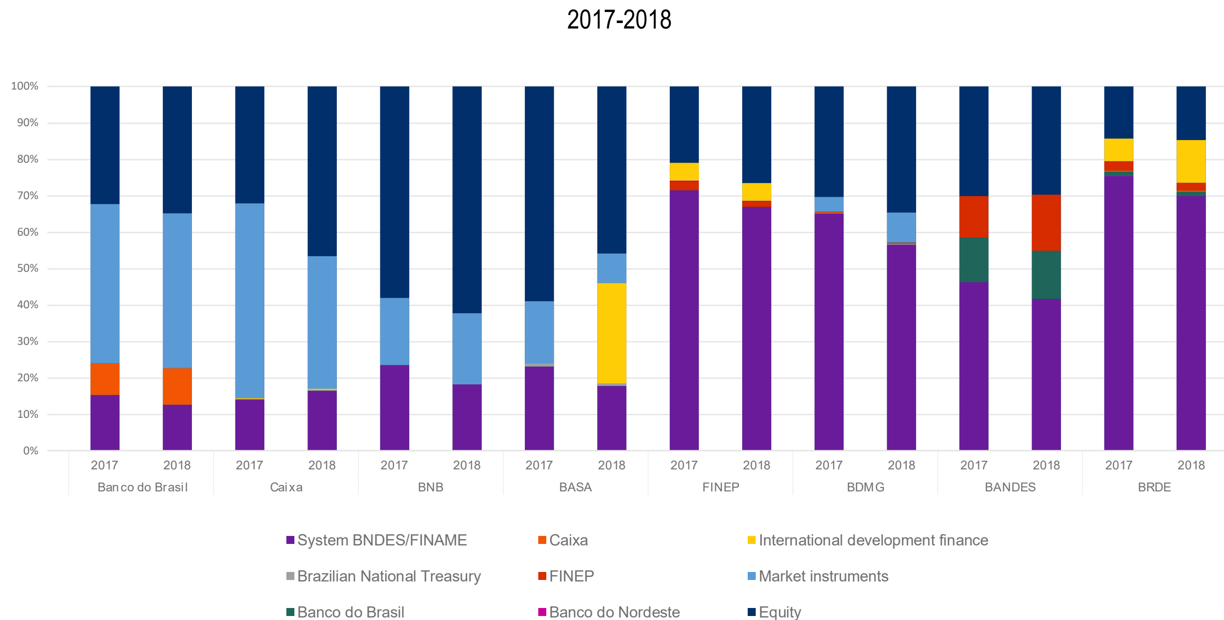
BNDES is the main funding source for many domestic DFIs, but the share is decreasing

Brazil's DFIs have historically held a significant share of total assets and total credit portfolio across the country's banking system (Horn and Feil, 2019[77]). This is largely driven by federal banks that make up more than 90% of the entire system of Brazil's DFIs. Since 2016 however, federal banks have lost a significant share in the overall market (measured by outstanding loans) in an effort by the government of Brazil to decrease the dominance of these institutions and crowd the private sector into long-term financing.

BNDES is not the largest federal bank, but it holds a central position in Brazil's system of DFIs. Many DFIs are financial agents of BNDES and derive their funding from BNDES (Horn and Feil, 2019[77]). Figure 3.1, illustrating outstanding, i.e. non-repaid, funding of Brazil's DFIs, shows the dependency on BNDES's resources in particular of second tier DFIs, e.g. FINEP and sub-national development banks. However, the share of BNDES as a funding source has been decreasing recently across all types of DFIs. This is mainly due to two factors related to changes in BNDES's funding structure in 2017/2018: The bank received overall lower volumes of resources from the government and has a more expensive pricing structure in place following the introduction of its new benchmark interest rate (*Taxa de Longo Prazo*, or TLP) (Byskov and Clavijo, 2017[78]; Pazarbasioglu et al., 2017[79]) (see also dedicated sub-section on BNDES below). While BNDES's funding cost will make the full transition from subsidised levels to the market rate over a period of five years only, funding costs are already almost at market rate. This has, in combination with lower volumes of funding received, already had a discernible effect throughout Brazil's system of DFIs.

Figure 3.1. Outstanding funding of Brazil's DFIs

2017-2018



Note: The figure is not comprehensive in depicting the funding sources of all domestic DFIs in Brazil. BNB = Banco do Nordeste; BASA = Banco da Amazonia; BDMG = Development bank of the state of Minas Gerais; BANDES = Development bank of the state of Espirito Santo; BRDE = Development bank of three states in the Far South region of Brazil.
Source: SITAWI, based on annual reports of banks

With less reliance on BNDES as funding source, DFIs are increasingly relying on their own resources and on the mobilisation of resources on markets. Additionally, Brazil's DFIs receive international development finance from e.g. the IDB, the New Development Bank, and the World Bank Group.

Sub-national development banks can be key in meeting local development needs, but barriers at system and institutional level persist

While local development needs can be addressed by different actors, sub-national development banks have a dedicated mandate to address these needs and at the same time a proximity to local actors that is not easily matched by e.g. MDBs or even NDBs. In the case of Brazil, this is additionally substantiated as federal banks (e.g. BNDES, BNB and BASA) mostly finance states and provide only limited financing to local actors such as municipalities. Paired with the high level of decentralisation in Brazil and different development priorities across states, sub-national development banks can be key in reducing inequality and advancing sustainable development across Brazil. An analysis of credit supplied however reveals that sub-national institutions only provide a small fraction of total credit supplied across all domestic DFIs and Brazil's banking system overall, and that only 22% of credit supply was channelled to DFIs focused on delivering development needs in Brazil's historically disadvantaged Northern and Northeastern region.

The remainder of section 3.2 will provide more detailed information on two domestic DFIs: Brazil's only national development, BNDES, and one of Brazil's sub-national development banks, BDMG.

BNDES – Brazil's national development bank

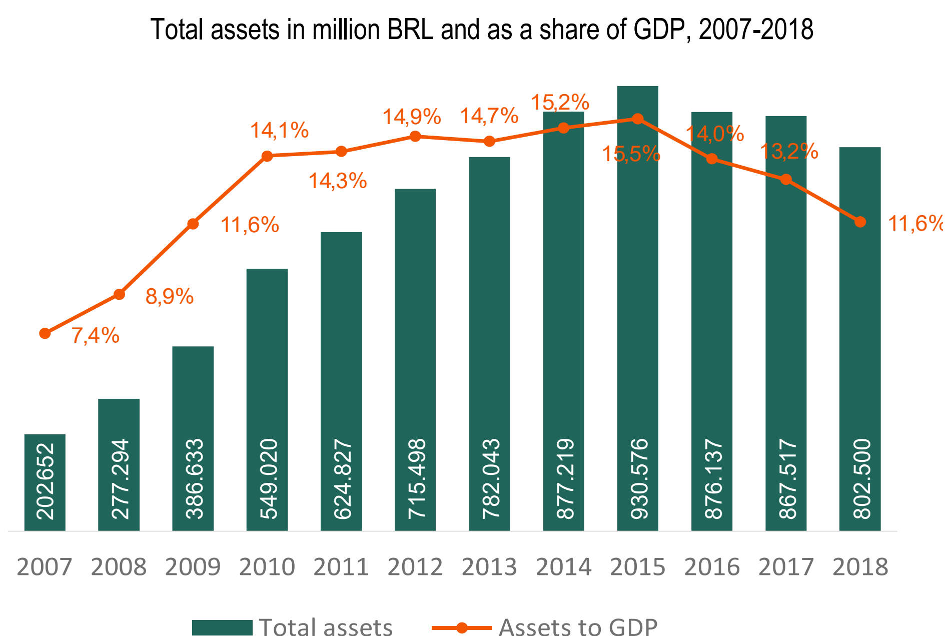
BNDES is owned by the federal government, supervised by the Ministry of Economy, and is mandated to implement government investment policies (BNDES, 2018[80]; BNDES, 2020[81]). It is one of the largest NDBs in the world, which is also reflected in its relevance for Brazil's economy. While the bank's total AUM

dropped to BRL 802.5 billion (USD 220 billion) in 2018, this still corresponded to 12% of Brazil's GDP in the same year (Figure 3.2) (BNDES, 2019[82]; World Bank, 2019[83]). A comparison with MDBs further underlines BNDES's financial footprint: The bank has higher AUM than the IDB (USD 126 billion) and almost half of the World Bank's total assets (USD 491 billion) (Morris, 2018[35]). Importantly in the current crisis environment, BNDES funnelled subsidised credit from the Brazilian Treasury to counter the sharp reduction in domestic credit supply when commercial banks reduced lending during the global financial crisis of 2008-09. On the back of significantly increasing transfers to BNDES from the national treasury, BNDES's assets increased by 236% from 2008 to 2015 (Figure 3.2), but decreased again more recently.

BNDES participates in the development of Brazil's PPA by providing advice in policy and budget discussions, and aligns its planning with the PPA (BNDES, 2018[80]; BNDES, 2020[84]). As mentioned above, this embeddedness in the national context and role as policy influencer is a distinct value-add of domestic development banks that is not easily matched by international development banks. Further highlighting the embeddedness of BNDES in the national context is the composition of the bank's Board of Directors, which includes appointees of various ministry heads[18] (BNDES, 2020[81]). Beyond BNDES as a bank itself, the BNDES system includes two subsidiaries: FINAME, a special agency for industry financing, and BNDESPAR, a business corporation operating in the capital market (BNDES, 2018[80]).

Figure 3.2. BNDES assets as a share of Brazil's GDP

Total assets in million BRL and as a share of GDP, 2007-2018



Note: Assets in local currency units, GDP in current local currency units
Source: (BNDES, n.d.[85]); (World Bank, 2020[86])

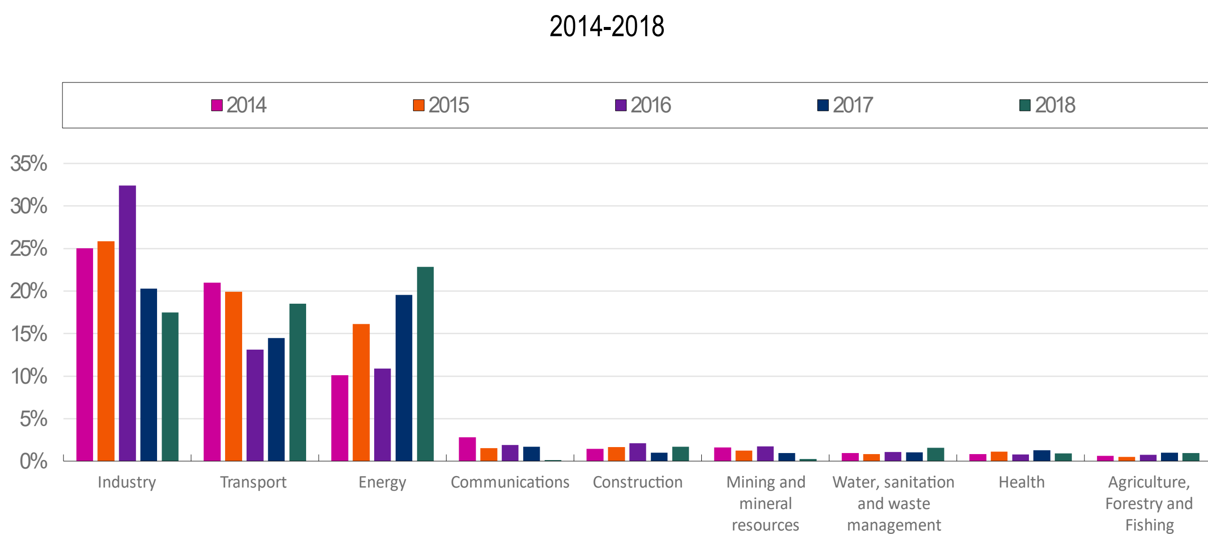
BNDES's mission is "to facilitate financial solutions that contribute […] for the sustainable development of the Brazilian nation (BNDES, 2018[80])." Its strategic focus areas, established in 2018, include infrastructure; industry and businesses; education, health and safety; capital markets; sustainability and regional development. The blended finance case studies in chapter 4 focus on these strategic objectives and outline BNDES's efforts to mobilise commercial capital for projects in these strategic areas.

[18] One appointment each by the Minister of Labour, Minister of Foreign Affairs, Minister of State Industry and Foreign Trade, Minister of Planning, Development and Management and Minister of Economy.

The bank derives 80% of its funding from government sources, 10% from shareholder equity and the remainder from a mix of international development finance and other liabilities, such as loans from the national treasury and the issuance of bonds (BNDES, 2019[87]). Recently, the government changed BNDES's funding model: In 2018, a new benchmark interest rate (TLP) was introduced that will transition the bank's funding cost from subsidised levels to the market rate over a period of five years (Byskov and Clavijo, 2017[78]; Pazarbasioglu et al., 2017[79]). This new funding model was a key part of the government's efforts to reduce fiscal costs of subsidised lending, reform the financial sector – including by increasing the depth of financial markets – and provide an impetus for BNDES's transition from sole financer to mobiliser of commercial investors (OECD, 2018[38]; OECD, 2019[24]). BNDES's strategic and financial objective reflect this new funding model as the bank aims to mobilise resources in markets, including through capital market development and securitisation, and by engaging in blended finance (BNDES, 2018[80]).

The bank's overall annual disbursements decreased by 63% from 2014 to 2018 – from BRL 188 billion (USD 79.9 billion) to BRL 69 billion (USD 18.9 billion) – in part as a result of changes in the bank's funding model mentioned above. Corresponding to its strategic objectives, industry and infrastructure-related sector make up the largest share of BNDES's disbursement (Figure 3.3). Over the period of 2014-18, BNDES disbursed the largest volumes to the industry sector (on average 24% of annual disbursements). However, since 2014, disbursement to the industry sector declined in absolute terms, and in relative terms since 2016. In 2018, 55% of BNDES's disbursement across all sectors went to large enterprises.[19]

Figure 3.3. BNDES share of total annual disbursements by sector



Note: The "Other" and "Education" sectoral categories were included in the calculation of total annual disbursements, but not shown.
Source: BNDES Download Centre, (BNDES, 2020[88]).

Since its establishment in 1952, BNDES has played an important role in infrastructure financing in Brazil. It is estimated that from 2007-2016, 70-80% of the country's total infrastructure financing originated from BNDES (Yokota et al., 2017[89]). Relative to BNDES's total disbursement, the transport and energy sectors received over the period of 2014-18 on average 17%, respectively 16%. Energy is the fastest growing sector in terms of its share of the bank's annual disbursements, jumping from 10% of the portfolio in 2014

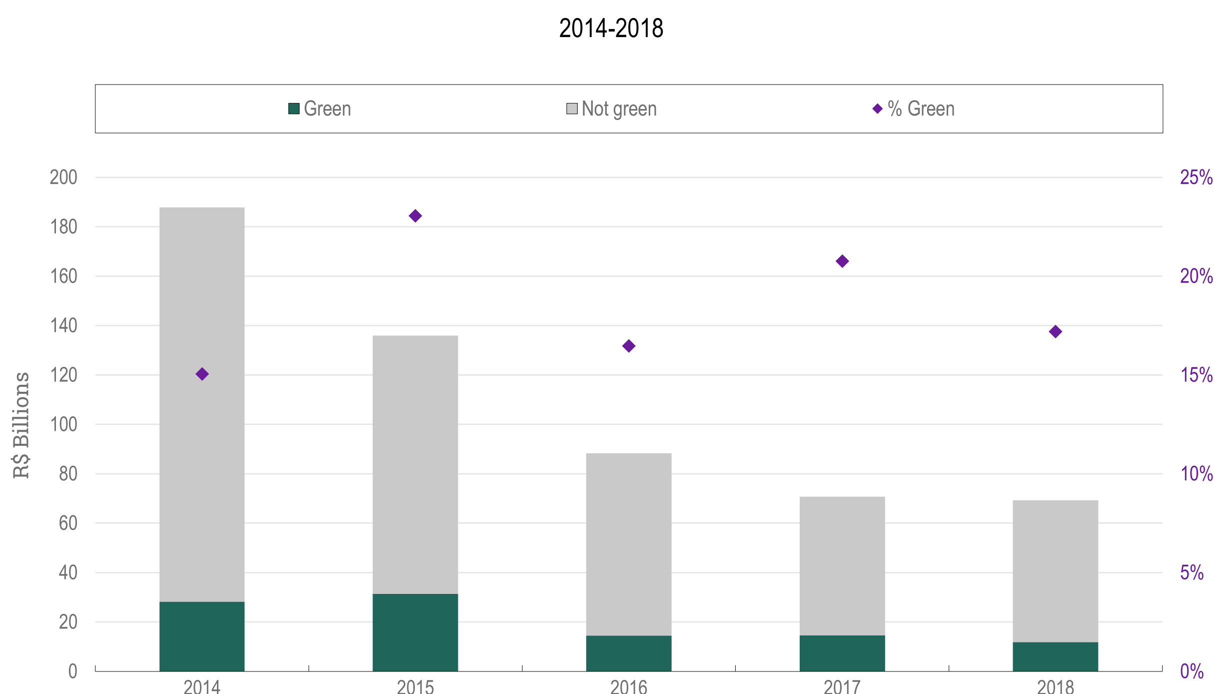
[19] Size classification by gross operating revenue of corporate clients, or annual revenue of individual clients: Large enterprises are > R$ 300 million (USD 82 million); Medium enterprises are > R$4.8 million (USD 1.3 million), up to R$300 million; Small enterprises are > R$ 360 thousand (USD 99 thousand), up to R$ 4.8 million; and Micro enterprises are equal to or smaller than R$ 360 thousand.

to 23% in 2018. The sectors water, sanitation and waste management; and agriculture, forestry and fishing received notably low shares of annual disbursements across the entire period.

Against the backdrop of decreasing total annual disbursements, green activities have maintained their share across BNDES's portfolio and averaged 18% from 2014-2018 (Figure 3.4). In green sectors, renewable energy and energy efficiency activities receive the largest proportion of disbursements, averaging 38% over the same period. Public passenger transport is the second-largest green sector at 18%. The overall increasing share of green financing in BNDES's disbursement underlines the bank's strategic priority on sustainability and green/climate considerations. Several elements supported the bank in implementing this priority: BNDES's Social and Environmental Responsibility Policy supports the integration of environmental dimensions into procedures, practices and policies, and its recent Corporate Social Responsibility Action Plans included the development of a Social and Environmental Policy for Capital Market Operations as well as the integration of climate change considerations into operational analysis, portfolio risk management and information disclosure (OECD, 2019[24]). This is in line with the formalised steps that can support the greening of a development bank: establishing risk management systems that incorporate climate change and preparing product development strategies to catalyse green investments (IDB, 2019[30]). Further steps would include the inclusion of green aspects in mandates.

Figure 3.4. BNDES green financing as a share of annual disbursements

2014-2018



Note: Data, including classification into 'green' and 'not green' taken from BNDES
Source: BNDES Download Centre: (BNDES, 2020[88]).

Going forward, it will be important for BNDES to reinvigorate its positive trend on green finance, including through blending. This is particularly relevant as ambitious climate action will support the government in achieving set development priorities, and will take into account the increasing evidence that green finance is outperforming conventional finance (UNEP Inquiry, 2020[73]). Chapter 4 below includes blended finance case studies of BNDES.

BDMG – The development bank of Minas Gerais

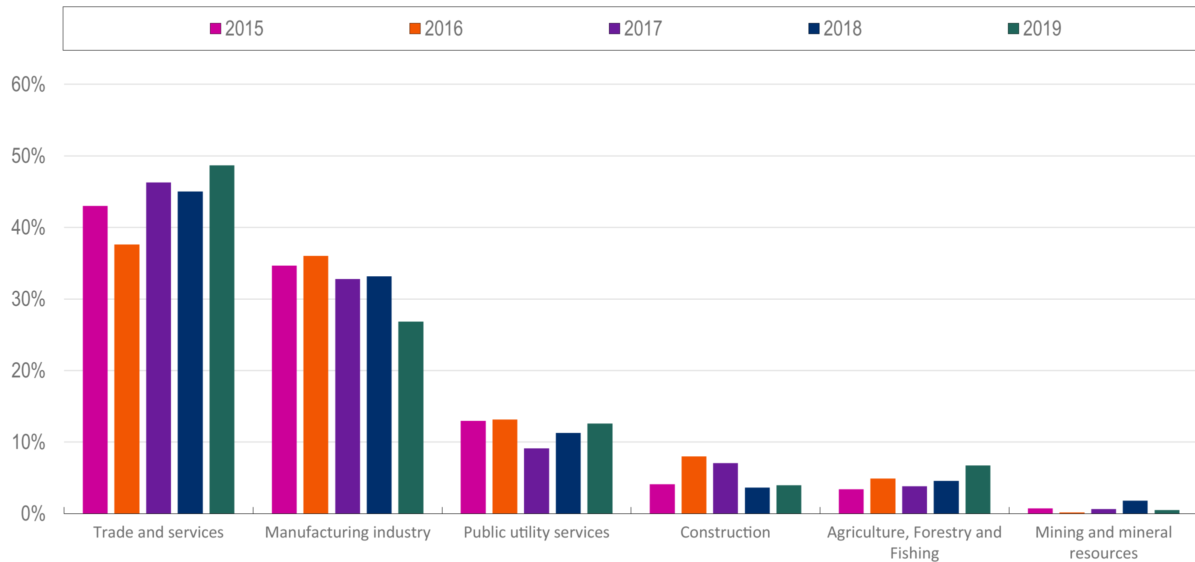
BDMG is the development bank of the state of Minas Gerais, which is Brazil's third largest economy located in the South Eastern region of the country. Ninety percent of the bank's assets are owned directly by the state, and the remainder is owned by state-owned entities: CODEMGE (9%), a company registered under the State Board of Trade, the Minas Gerais Investment Partnerships (1%) and the State Highways Department (<1%) (BDMG, 2018[90]). Its Board of Directors is composed primarily of direct representatives of Minas Gerais, as the mandated controlling shareholder (BDMG, 2020[91]). In 2016, BDMG held BRL 7.617 million in AUM (USD 2.182 million), about 3% of the state's GDP in the same year (BDMG, 2017[92]; OECD, 2020[93]). As a sub-national development bank, BDMG is significantly smaller than BNDES, but is one of the most relevant sub-national development banks in Brazil in terms of AUM. BDMG is a financial agent for BNDES (and BNB) in Minas Gerais, but on-lending from BNDES dropped significantly in recent years. As the development bank of Minas Gerais', BDMG is also a financial agent for the states' Development Funds and acts as the fund for the promotion of the coffee agribusiness sector (FUNCAFÉ) and FINEP, an institution dedicated to innovation promotion and financing (BDMG, 2019[94]).

BDMG's aims to promote the "sustainable and competitive socioeconomic development of Minas Gerais, [generate] more and better jobs and [reduce] inequalities (BDMG, 2018[90])." Since its foundation, BDMG supported various sectors of relevance to the economy of Minas Gerais, i.e. industry, agriculture, trade, commerce and services. The trade, commerce and service sector contributes 58% to the state's GDP, and the industry and agriculture sectors contribute 34%, respectively 8.5% to the state's economy (AMCHAM, 2014[95]). In recent years, the relevance of the agricultural sector for Minas Gerais and BDMG increased in particular (AMCHAM, 2014[95]); (BDMG, 2018[90]). Going forward, the state's priorities include trade, in particular in the area of information and communication technology (ICT), and sustainable infrastructure (AMCHAM, 2014[95]). Chapter 4 includes blended finance case studies of BDMG in these sectors.

BDMG aligns its operations with Minas Gerais's Integrated Development Plan (*Plano Mineiro de Desenvolvimento Integrado*) and Multi-Annual Government Plan (*Plano Plurianual de Ação Governamental*). Additionally, the bank seeks alignment with the 2030 Agenda, and co-operation and exchange with other development banks on alignment (BDMG, 2020[96]; BDMG, 2019[97]). Since 2012, BDMG has raised BRL 2.5 billion on national and international markets, mostly for green, innovation and agribusiness projects. BDMG raised 34% of its funds through agribusiness credit and additionally relied on international development banks, including CAF (the regional development bank for Latin America), IDB and the French development agency AFD, for 42% of its funds (BDMG, 2018[90]). Returns made on state funds were earmarked for the bank's *Novo Somma* Programme, which focuses on municipal development through infrastructure promotion (BDMG, 2020[98]). While no public documents on BDMG's policy and strategy on the mobilisation of commercial capital are available, the bank is the only sub-national development bank of Brazil that already engages in blended finance (see also Chapter 4).

The total volume of BDMG's annual disbursements dropped from 2014 (BRL 2,510 million) to 2017 (BRL 1,152 million), likely due in part to the recession and its prolonged impacts on states throughout Brazil. In 2018, its total annual disbursement increased again in 2019 (BRL 1,308 million). Over the period of 2015-2019, the trade and service sector received on average 44% of BDMG's disbursements (Figure 3.5). Industry manufacturing was the next largest sector – at 33% of average annual portfolio disbursements – but the share of annual disbursement to the sector decreased from 35% in 2014 to 27% in 2019. Disbursement to the agriculture, forestry and fishing sector increased from 1% in 2014 to 7% in 2019. The share of annual disbursement to the mining sector is limited and overall decreased from 2015-2019.

Figure 3.5. BDMG share of total annual disbursements by sector



Source: Data provided by BDMG for the purpose of this study

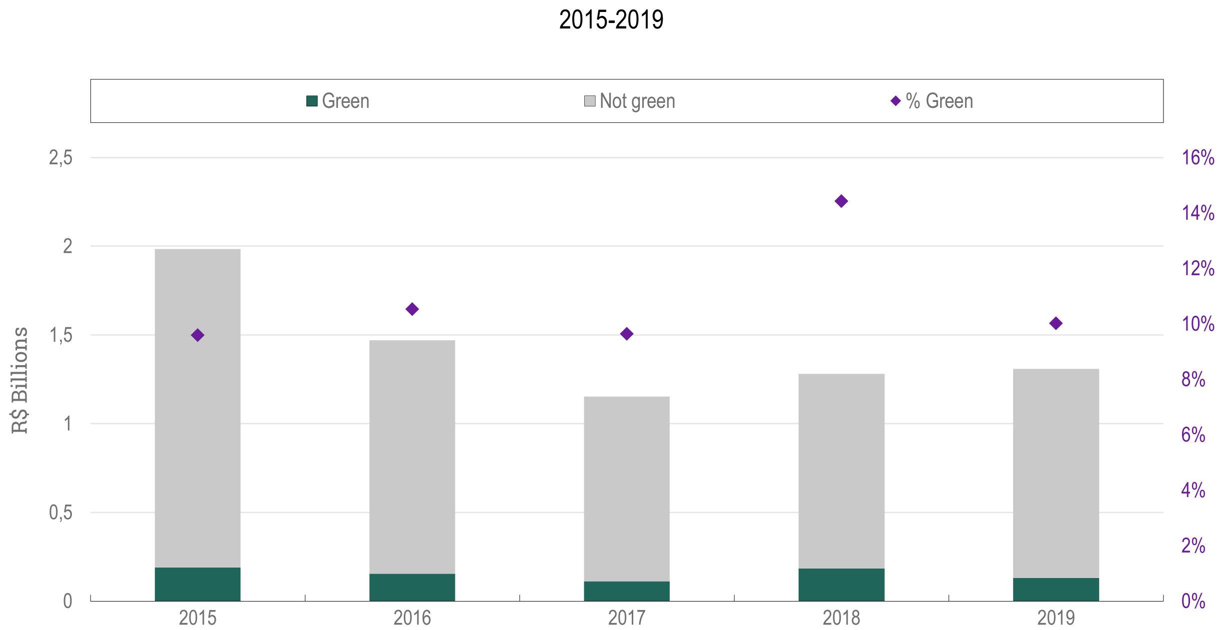
BDMG supports both public and private actors. In 2019, the bank's loan portfolio was comprised primarily of large enterprises (48%), followed by micro and small enterprises[20] (27%), medium-sized enterprises (16%) as well as municipalities and other local public sector entities (10%). Similar to BNDES, BDMG uses a mixed lending model of both first-tier and second-tier lending, though BDMG engages in more on-lending as a proportion of its portfolio (BDMG, 2018[90]). As a share of the bank's lending portfolio in 2018, the majority of BDMG's loans mature in 1-5 years (52%) (BDMG, 2018[90]). Longer-term loans that mature in 5-15 years comprised 11%, and loans expiring after 15 years accounted for less than 3% of total loan financing in 2018 (BDMG, 2018[90]). For infrastructure project financing, BDMG structures common concession operations and PPPs (BDMG, 2020[96]).

Against the backdrop of BDMG's decrease in total annual disbursement in the period of 2014 to 2019, the bank's green financing remained at a relatively stable level of 13%-10% (Figure 3.6) and begins to establish itself in the bank's business model. The biofuels sector received the largest proportion of green disbursements, but has decreased from 73% to 25% since 2016. Disbursements for renewable energy and energy efficiency increased from 7% of green finance in 2015 to 54% in 2019. Projects related to pollution prevention and control received on average 15% of the bank's green financing from 2015 to 2019, followed by the water and sanitation sector (11% of green finance on average). Given the positive impacts of climate action across the SDGs, further expanding BDMG's green financing will be important in achieving the bank's institutional objective of aligning with the Agenda 2030.

[20] Companies with annual gross up to BRL 30 MM

Figure 3.6. BDMG green financing as a share of annual disbursements

2015-2019



Note:
Source: Data provided by BDMG for the purpose of this study

Two recent milestones are a further indication of BDMG's outlook towards sustainability: In 2018, the bank launched PV pilot operations and a green credit line, and, in 2019, signed a EUR 100 million credit line with the EIB for the promotion of clean energy. Additionally, its participation in the Climate Action in Financial Institutions Initiative and the United Nations Global Compact Network can support BDMG in firmly establishing green finance in its business model and blending portfolio.

4. Mapping the engagement of Brazil's domestic DFIs in blended finance

In brief

- Brazil's domestic DFIs are starting to engage in blended finance. While blending to date is limited to only a small share of domestic DFIs, the use of a wide variety of blended finance instruments and mechanisms by these institutions indicates a certain level of knowledge and expertise on blended finance.
- Brazil's DFIs are undergoing changes in funding models, which creates an opportunity for change to further develop DFIs' business models and to foster the use of blended finance approaches. Efforts in mobilising commercial capital for sustainable development can also benefit government efforts to reduce the level of public indebtedness.
- The research conducted for this paper highlights that Brazil's DFIs are cognisant of the need to change incentive and performance systems at the corporate and staff level to successfully engage in blended finance. There is also awareness that leadership buy-in is needed for institutions to engage in blended finance.
- Bottlenecks for the uptake of blended finance remain and include a limited evidence base, success stories and lessons learned from blended finance operations in the country, as well as incentives that are not yet targeting the mobilisation of commercial capital.
- Co-operation at the domestic, regional and international level could provide support to the blended finance agenda in Brazil, including through an exchange among Brazil's domestic DFIs, governmental entities, financial supervisory institutions, and the private sector.

This chapter explores the state of blended finance in Brazil's development finance institutions and highlights emerging approaches as well as remaining challenges. It draws on a survey among ABDE members, in-depth interviews, a desk review and project-level case studies (see Table 4.1 below for an overview).

Table 4.1. Overview of project level case studies

Sector	Financing sources	Blending instrument
FGI – Investment Guarantor Fund		
Financial services	The Brazilian Guarantees and Fund Managements Agency, BNDES, other public and private banks	Guarantee Fund
BNDES direct investment in Sunew		
Green energy	BNDES, CSEM (a Brazilian research center), Sunew and private investors	Direct equity investment in company
BNDES direct investment in company: Bug Agentes Biológicos		

Agriculture	BNDES, Bug, private investment funds and Dutch company Koppert Biological Systems	Direct equity investment in company
	Minas Gerais Project Preparation Facility	
Water and sanitation, transport and social infrastructure	BDMG and IDB	Grants and technical assistance
	BNDES green bond issuance	
Green energy	BNDES, Bank of America, Credit Agricole and JP Morgan, Sustainalytics, private investors and private companies.	Bond
	BDMG invests in AvantTI Investment Fund	
ICT	BDMG, a French and a Brazilian mass media group, domestic pension fund, and private equity firm acting as fund manager	Collective Investment Vehicle
	BDMG direct investment in pharmaceutical company Biomm	
Biopharmaceuticals	BDMG, BNDES, a Brazilian private equity firm and Biomm's funders	Direct investment in company

4.1. Brazil's DFIs are starting to engage in blended finance

Blended finance is still at a nascent stage in Brazil, but both domestic and international development finance actors are starting to gain experience. For Brazil's DFIs only, the research conducted for this paper reveals varied experiences in terms of instruments and contexts (e.g. size of banks, history of international co-operation, urban and rural project settings, etc.). Only 3 out of the 12 ABDE members responding to the survey stated to engage in blending[21], but all three employ a range of blended finance instruments which indicates a certain expertise of blended finance in already active institutions. A similar variety of blended finance instruments is also seen in other domestic DFIs in the LAC region (IDB, 2013[99]).

Reflecting the novelty of blended finance in the Brazilian context, Brazil's DFIs report that blended finance is often accompanied by technical assistance and the provision of grant financing at different project stages. Additionally, guarantees and special commercial conditions (such as special interest rates and/or tenor) are provided by Brazil's DFIs. For instance, BNDES manages the Investment Guarantor Fund (FGI – *Fundo Garantidor para Investimentos*), which provides guarantees to MSMEs to support them in accessing credit from financial intermediaries (see Box 4.1 below).

Box 4.1. Case study: BNDES Investment Guarantor Fund

The FGI (*Fundo Garantidor para Investimentos* – Investment Guarantor Fund) is a private guarantee fund managed by BNDES, established in 2009 in response to the financial crisis and the ensuing lending contraction to firms (Lanz and Tomei, 2017[100]). The aim of this fund is to reduce the uncertainty of projects and businesses and to leverage private finance in sectors that were previously mainly funded by public resources (Griffith-Jones and Ocampo, 2018[101]). Shareholders of the FGI include the Brazilian Guarantees and Fund Managements Agency (ABGF), BNDES, as well as public and private banks. FGI provides guarantees to MSMEs, as well as individual entrepreneurs, and self-employed truck drivers, so as to facilitate their access to credit from financial institutions and improve financing conditions (e.g. longer terms, lower collateral requirements and lower interest rates) (BNDES, 2020[102]). Guarantees can be provided to loans extended by BNDES, either directly or indirectly, through DFIs and other financial institutions. The Fund also includes the FGI Free Credit, which allows the Fund to provide guarantees to loans extended by financial institutions without making use of BNDES resources.

Over the 2010-2018 period, the FGI has guaranteed loans for an amount of BRL 7.4 billion (USD 2

[21] This refers to the OECD DAC definition of blended finance.

billion), supporting 37,000 operations mainly related to working capital financing, but to some extent also to investment and innovation. From 2017 to 2018, the FGI Free Credit Line grew by 157%. Since the FGI creation until December 2018, 62% of FGI's beneficiaries were new borrowers who were not able to access BNDES resources before, demonstrating the additionality and mobilisation potential of the instrument.

Note: Further details on this case study can be found in Annex C.
Source: BNDES internal documents and interviews with staff.

Brazil's DFIs are also engaging in more complex blended finance mechanisms. In 2015, BDMG engaged in a syndicated loan for a health infrastructure project, involving a domestic private bank as lead arranger and investor and BNDES as one of the investors. An additional two institutions indicated their commitment of taking part in commercial financial vehicles, such as impact investment funds. Moreover, BNDES engages in interest and currency hedging in credit operations.

Brazil's DFIs are also increasingly investing in companies both directly and indirectly, through private equity funds. For instance, BNDES invests in a variety of private equity and venture capital funds and companies, with the aim to support and develop the domestic private and venture capital markets (BNDES, 2014[103]). BNDES's equity investments occur mainly through its subsidiary BNDESPAR, which invests in the capital market. As of December 2018, BNDESPAR's fund portfolio had 42 active funds, with a committed equity of about BRL 3.5 billion (approximately USD 1 billion). The aggregate committed equity of these funds amounts to BRL 17.9 billion (USD 4.9 billion), which implies that for every BRL 1.00 (USD 0.27) invested by BNDES, BRL 4.11 (USD 1.12) are invested by other investors (BNDES, 2018[104]).[22]

Through its equity investments, BNDES moved towards a "venture support role" for technology development and innovation. The bank devotes up to 1.5% of its profits to social, cultural, and economic research funds, including the technology fund FUNTEC (Mazzucato and Penna, 2016[105]). FUNTEC provides grants for research and development (R&D) projects developed jointly by research institutions and companies, reserving the right to participate and directly invest in spin-off companies created to produce and commercialise the R&D results. FUNTEC is a blending instrument aimed at attracting investment from private sources in different proportions depending on the size of the companies involved, for at least 10% of the value of the technological project. Additionally, BNDESPAR invests in the CRIATEC Fund, a venture capital fund providing seed capital to innovative micro and small-sized enterprises, with capital contributions also provided by the sub-national development bank Banco do Nordeste. CRIATEC is now in its third phase, with the first two having supported over 70 Brazilian companies that registered nearly 60 patents (BNDES, 2019[106]). These are clear examples of how a NDB can shift from its traditional role of finance provider to a more dynamic one as finance mobiliser, market maker and a first-mover in green and innovative sectors, taking the associated risks but also sharing the returns (see also Box 4.2 below).

Box 4.2. Case study: BNDES direct equity investments

Among BNDES's direct equity investments, the case of Sunew emerges, a company manufacturing and commercialising Organic Photovoltaic (OPV) films to generate solar energy. The OPV technology was developed by the Brazilian research centre CSEM, which BNDES supported in 2013 through FUNTEC. The FUNTEC agreement provided for the pre-emptive right for BNDESPAR to participate in

[22] The amounts in USD were calculated by the authors using the OECD exchange rate for Brazil for the related year (OECD, 2020[198]).

start-up companies that are created to produce and commercialise the products resulting from the research. This right was exercised by BNDESPAR in the context of Sunew, CSEM's spin-off company. In 2015, BNDESPAR subscribed shares for an amount of BRL 4.5 million (USD 1.3 million), which gave it rights to 30% of the company's shares, with the rest held by CSEM (45%), a private investor (15%) and the company's funders (10%). Subsequently, there have been further capital increases, mainly needed to enable commercialisation of the OPV films, in which Sunew was successful in attracting capital from four new private investors, including some angel investors. BNDESPAR then approved subsequent capital increases to maintain its ownership interest in Sunew (BNDES, 2017[107]).

In the context of the BNDES's venture capital funds series CRIATEC, a case worth highlighting is the company *Bug Agentes Biológicos* (Bug) that operates in biological pest control in agricultural crops. Created in 2001, Bug needed managerial experiences as well as financial capital to operationalise and commercialise the technology (Rufino, 2016[108]). In 2009, BDNES provided a capital contribution of BRL 1.5 million (USD 0.7 million) to the company through the CRIATEC Fund I, enabling it to finance a production plant, create a commercial department and hire new employees. In 2015, and under BNDES's Investment Maintenance Programme[23], BNDES extended an additional credit line of BRL 1.9 million (USD 0.6 million) to Bug. CRIATEC's investment and managerial support to Bug mobilised BRL 7.3 million (USD 2.2 million) of two Brazilian investment funds (Rufino, 2016[108]). In the meantime, Bug was able to significantly accelerate growth, with net operating revenues almost tripling over 7 years, from BRL 3.4 million (USD 1.7 million) in 2009 to BRL 9.7 million (USD 3.5 million) in 2016, as well as create jobs and register patents and new products (Inseed, 2017[109]). Bug also received international recognition. In 2014, it was nominated Technology Pioneer by the World Economic Forum for enabling a "greener tomorrow", by "reducing the need for pesticides in Brazil through mass production of parasitic wasps which target pests that prey on crops" (World Economic Forum, 2014[110]). In 2017, CRIATEC sold Bug's stocks to a Dutch biochemical company, Koppert Biological Systems.

Note: Further details on the case study can be found in Annex C.
Source: (BNDES, 2017[107]); (Rufino, 2016[108]); (Inseed, 2017[109]); (World Economic Forum, 2014[110]); BNDES internal documents and interviews with BNDES staff.

BDMG is also engaging in equity investments, both directly in companies and indirectly in private equity funds, in line with the bank's objective to strengthen the innovation ecosystem of the state of Minas Gerais and in support of companies with high growth and socioeconomic impact potential (see Box 4.3).

Box 4.3. Case study: BDMG equity investments

BDMG currently invests in nine equity funds as well as directly in a number of companies. Two examples are worth highlighting: The bank's engagement in venture capital funds, namely in the Investment Fund AvanTI in 2014, and an example of direct investment in the biopharmaceutical company Biomm.

AvanTI is an investment fund that invests in a diversified portfolio of growth and early-stage Information and Communications Technology (ICT) companies which operate in the education, health, media and financial services sectors. Target companies have annual revenues ranging from BRL 12 to 50 million (approximately USD 3 to 14 million) in the year before the investment. The Fund was designed to be active for eight years, with two distinct phases: The first five years focused on investment in target companies and the last three years focused on planned divestment of these same companies. The

[23] The BNDES Investment Maintenance Program (BNDES PSI), launched in 2009, provides (subsidised) loans especially to micro, small and medium-sized companies, as part of the government's measures to mitigate the effects of the international financial crisis.

Fund is currently in the second phase and has already sold the shares of one of the portfolio companies. Planning an exit phase and defining a clear exit strategy is important to avoid crowding out private capital, to support market development or creation through demonstration effects, as well as to enhance returns and free up capital for new investments. The Fund's expected results include support to innovative companies, the development of the local venture capital industry, as well as job creation.

BDMG holds a 4.4% shareholding position in the Fund, having contributed BRL 6.25 million (USD 1.7 million). As BDMG is a sub-national development bank mandated to work in the State of Minas Gerais, the Fund must invest in companies in Minas Gerais for an amount at least equal to the BDMG investment in the Fund. In addition to BDMG, investors in AvanTI include a French and a Brazilian mass media group, a domestic pension fund, as well as a private equity firm acting as fund manager (Exame, 2014[111]). The presence of BDMG as a shareholder lowered the perceived risk of the Fund and gave confidence to other institutions to invest in the Fund.

Among BDMG's direct investments in companies, the case of the biopharmaceutical company Biomm is noteworthy. In 2013, BDMG invested in Biomm, listed in the Brazilian stock exchange, which is implementing an industrial unit in Minas Gerais for large-scale production of insulin using the recombinant DNA technology. The end-objective of the company is to localise the production of insulin and other biopharmaceutical products, as for instance 100% of the consumed insulin in Brazil is currently imported. In terms of financial contribution, BDMG provided BRL 40 million (USD 11 million) in equity and BRL 56 million (USD 15 million) in other forms of financing. The overall capitalisation of the company amounted to BRL 540 million (USD 148 million), with additional financial contributions of BNDES, a Brazilian private equity firm and Biomm's founders. BDMG has a seat in the company's Executive Board, currently holding a 6.7% capital share, although it is not actively involved in control and planning. Again, the presence of development banks such as BNDES and BDMG as shareholders of the company contributed to mitigate the company's risk and mobilised private investors.

Note: Further details on these case studies can be found in Annex C.

4.2. Revision of funding models, incentive systems and mandates are opportunities for change

The majority of survey respondents stated that (expected) changes in resource and funding models – which are encountered by many DFIs as outlined in section 3.2 – are a key motivation in seeking to mobilise commercial capital. In the case of BNDES, the introduction of the benchmark interest rate TLP is part of a shift in the bank's funding model towards less reliance on government resources and provides an impetus to increase the bank's efforts of mobilising commercial investors for development projects (OECD, 2018[38]); (OECD, 2019[24]). Given that many domestic DFIs in Brazil receive funding from BNDES, the introduction of the TLP also impacts these DFIs. Thus, the government's push for BNDES to expand its role as resource mobiliser is already trickling down to e.g. sub-national development banks that can also mobilise resources on capital markets per Central Bank regulation. The relevance of development banks' funding and business models is also highlighted at the level of the G20 (G20 Eminent Persons Group on Global Financial Governance, 2018[112]). While the review of the G20 Eminent Persons Group targeted MDBs, its main message of development banks needing to shift their business models from sole financers to mobilisers applies to all types of development banks, given the scarcity of public funds and the global investment needs to deliver the 2030 Agenda. Going forward, the level of indebtedness of many states in Brazil, including those states with sub-national development banks, might further incentivise state governments and sub-national development banks to promote and engage in blended finance.

In order to implement this vision, development banks will additionally need to better target their incentive and performance systems towards mobilisation. To date, corporate and staff performance in many institutions is driven more by commitments or disbursements than by efforts to mobilise commercial finance. This encourages an emphasis of institutions and individual officers on larger investments, especially in infrastructure, but does not necessarily encourage the strategic use of concessional finance for the mobilisation of additional resources (Bhattacharya et al., 2019[113]). The survey and in-depth interviews conducted for this research highlight that Brazil's DFIs are cognisant of the need for change in internal incentive systems and leadership buy-in to encourage staff to engage in blended finance.

Revising strategic priorities, policies and mandates are additional key drivers for development banks' efforts to mobilise commercial capital for sustainable development. For example, including capital market development, the mobilisation of resources and environmental sustainability in BNDES's strategic priorities underlines the institutions' commitment to these objectives and serves as a path finder for the organisation and its staff. Additionally, the bank's revised Social and Environmental Responsibility Policy better integrates social and environmental dimensions in the operational flow and further underlined the bank's commitment to environmental and social sustainability with the creation of a Sustainability Committee and a Public and Socio-environmental Management Division (BNDES, 2018[114]). Among several initiatives and instruments, BNDES's green bond issuance in 2017 underlined the bank's priority to shift from finance provider to mobiliser and promote green projects, and further demonstrated the viability of a green bonds issuance on the international capital market to other Brazilian banks (Box 4.4). To drive Brazil's sustainable development pathway it is important to build on the business case of mobilisation for climate. A clear mandate from the government to support a green economy and mobilise commercial resources for this purpose could support efforts in this area even in the changing pricing and macro-economic context.

Box 4.4. Case study: BNDES green bond issuance

In 2017, BNDES issued a USD 1 billion green bond to finance environmentally sustainable projects in Brazil. The 7-year bond was listed in the Luxembourg Green Exchange and received a Ba2 rating from Moody's. It was issued with a 4.75% annual coupon, lower than the 5.25% originally expected, due to oversubscription, with demand reaching USD 5 billion and orders from over 370 investors (Climate Bonds Initiative, 2017[115]). The bond's proceeds were fully allocated to eight wind power generation projects, for a total of 1,323 MW of new installed capacity and 421,608 tons of CO2-equivalent estimated to be avoided each year (OECD, 2019[24]).

The issuance resulted in benefits at several levels. Other than mobilising resources for wind energy projects, the issuance allowed BNDES to diversify its investors' base. Green bond investors consisted of asset managers (68%), hedge funds (13%), insurance and pension funds (9%) and banks (9%) (BNDES, 2018[116]). Importantly, the bond issuance mostly mobilised conventional, i.e. non-green, investors. The transaction also encouraged other Brazilian issuers to access the green bond market and built a new reference point in the structure of this market for international interest rates (BNDES, 2017[117]). Further research conducted for this study highlights that the issuance motivated the sub-national development banks BDMG and BRDE (Banco Regional de Desenvolvimento do Extremo Sul) to also issue green bonds. For instance, in 2018, BDMG, in partnership with the Inter-American Development Bank (IDB), launched the Green Bond Framework, followed by a second part opinion (SPO) (Sustainalytics, 2018[118]). By financing wind power generation projects, BNDES's green bond issuance additionally contributed to the further development of the wind power industry in Brazil.

Note: Further details on this case study can be found in Annex C.
Source: (BNDES, 2017[117]); (BNDES, 2018[116]); (Climate Bonds Initiative, 2017[115]); (OECD, 2019[24]); and research conducted by SITAWI.

Developments beyond Brazil further highlight that funding and business models that do not solely rely on regular budgetary allocations from governments require development banks to re-envision the way in which they finance development, and can set out a path to maximise financing for development (OECD/The World Bank/UN Environment, 2018[25]). Box 4.5 provides an example of South Africa's DBSA, and how its funding model, incentive system and mandate promote the bank's disposition to engage in blending.

Box 4.5. The relevance of funding models, incentive systems and mandates in mobilisation: The case of DBSA

DBSA is a wholly government-owned national development bank with a focus on infrastructure promotion in South Africa and other countries of the Southern African Development Community. While the bank received its original capital from the South African Government, it was created as a self-financing entity, meant to raise funds from capital markets. Only occasionally is this funding model supplemented by public credit lines. This is also reflected in DBSA's mission that specifically sets the bank out to "promote sustainable use of scarce resources". The bank's relatively small size (ZAR 84 million in assets in 2017 (USD 6.3 million) or 1.8% in assets-to-GDP in the same year) is an additional factor in DBSA increasingly looking to leverage its balance sheet and mobilise commercial finance.

In 2016, amid an uncertain economic environment and timid macroeconomic forecasts that emphasised the need to use funds strategically, DBSA took the decisive step to reduce its disbursement target and introduce a mobilisation target in its strategic objectives. In its 2018 Annual Report, the bank set out on a trajectory to achieve increasingly ambitious catalysation targets: In 2018, the target key performance indicator stood at ZAR 25.6 billion (USD 1.9 billion) with a steady yearly increase to ZAR 49.2 billion (USD 3.7 billion) in 2021. DBSA remains one of the very few development banks – including multilateral and bilateral ones – to include catalysation explicitly in corporate scorecards.

Note: The trajectory of DBSA's mobilisation KPIs was set before the Covid-19 pandemic and its attendant economic crisis, such that the KPI targets for 2020 and 2021 might be subject to revision.
Source: (OECD, 2019[24])

It is important to note that while the use of e.g. 'leverage ratios' in corporate scorecards is a helpful metric to highlight the volumes of finance mobilised, these ratios need to be dynamic and reflect changes in the country and sectoral contexts in order to make a meaningful assessment of mobilisation of *additional* commercial capital that would otherwise not have supported development projects. In addition, reference to market creation and catalysation of broader financial flows for development in mandates of development banks could be commensurate to the transformative potential of these institutions and their non-financial role as policy influencers (see also section 2.3).

While funding models, mandates and performance systems are important factors in development actors' proclivity to engage in blended finance, operating models and investment attributes of individual projects will continue to determine the use of instruments and the degree of blending (OECD, 2018[8]). In this sense, engagement in blended finance only expands the toolkit of development banks where the mobilisation of additional resources is possible, and allows these banks to use scarce public funds strategically. In contexts where the mobilisation of commercial capital is not yet possible, development banks that in principle engage in blending will chose to continue to support projects with concessional resources, such as grants, with the aim of eventually building private sector engagement.

4.3. Bottlenecks for the uptake of blended finance and harnessing its transformational potential remain

While the need to mobilise commercial resources is clearly recognised across Brazil's DFIs, bottlenecks related to the uptake of blended finance instruments and mechanisms at scale remain.

Information and evidence on what works, what does not work, and why are insufficient

Several respondents to the survey among Brazil's domestic DFIs describe insufficient data and information, as well as lack of an evidence base on the application of blended finance as major challenges in the uptake of blended finance. While three of Brazil's DFIs are already engaging in blended finance, five survey respondents stated that they are not aware of blended finance examples in Brazil. Relatedly, 75% of respondents expressed the need for better expertise on the concept of blended finance, its instruments and mechanisms. In particular, Brazil's DFIs express a need for more information and evidence on the respective roles of development actors on the one hand and commercial investors on the other hand.

Transparency on good practice examples in different sectors, as well as the magnitude and concessionality of finance channelled towards blended finance approaches; what is mobilised as a result; what impact is being achieved through blending; and which instruments are effective in mobilising commercial finance could be helpful in building the evidence base for Brazil's DFIs. The extent of interest in blending is highlighted by three out of the five respondents lacking knowledge of blended finance examples stating that they are however exploring opportunities to mobilise commercial resources. Additionally, 50% of survey respondents stated that information on lessons learned and challenges encountered with blended finance instruments could be useful in promoting blended finance across the system of Brazil's DFIs.

Incentives and the broader enabling environment are not yet adequately set up to mobilise commercial capital

Incentives and a policy and regulatory framework conducive to the mobilisation of commercial capital are critically important for the uptake of blended finance at scale. Important aspects of such a framework include a coherent and comprehensive set of policies and regulations related to the financial sector, as well as those sectors that require scaled up finance and investment, e.g. water and sanitation, SMEs, health and clean energy. The research conducted for this paper reveals that policies and regulation in place often continue to fall short of creating the necessary incentives to mobilise commercial capital.

The need for a conducive policy and regulatory framework for mobilisation is recognised in Brazil. Already in the 1990s, a number of reforms were implemented to enable private sector engagement in infrastructure. These were successful in attracting commercial capital for telecommunications and electric energy, but less successful in the transport, as well as water and sanitation sectors where challenges of cost recovery remain (de Ávila Gomide and Pereira, 2019[119]; OECD, 2018[38]). Across infrastructure sectors, past and current programmes enabled by these reforms faced capacity issues that persisted even when finance was available, and indicate that institutions and processes governing infrastructure development need to be improved (Raiser et al., 2017[54]). Additionally, a combination of insufficient incentives and significant risks across environmental licensing, political bargaining and currency exchange persist that disincentivises private sector participation in infrastructure promotion (de Ávila Gomide and Pereira, 2019[119]). A lack of standard agreements for how such risks should be shared leads to investor uncertainty and often causes project delays (de Ávila Gomide and Pereira, 2019[119]). Overall however, the level of savings and investments remain low by international standards, limiting the pool of domestic capital on which blended finance could draw from. This situation prevails, despite policy and regulatory reforms for capital market development over the past two decades (Park, 2012[120]). Additionally, at times global

financial regulation challenges the mobilisation of commercial investment by financial institutions. For example, reforms of global regulation over the last decade have heightened capital requirements for insurance companies and required investment limits on certain asset classes for some pension funds. Banks with both a development and commercial mandate have also been more risk-constrained as they implement Basel III guidelines.

As an example of the key role played by the regulatory and enabling environment, a number of soft regulatory improvements in Brazil contributed to the development of the domestic green bond market.[24] In particular, the release of the Guidelines for Issuing Green Bonds by the Brazilian Business Council on Sustainable Development (CEBDS). In addition to this, in 2016, the Brazilian Bank Federation (FEBRABAN) facilitated the growth of this instrument and increased transparency and confidence by guiding market participants in green bond issuances. Moreover, key industry associations in Brazil (such as UNICA for sugar and ethanol, IBÁ for forestry, ABEEólica for wind energy and ABSOLAR for solar), promoted green bonds among their members, stimulating knowledge sharing (Climate Bonds Initiative, 2017[115]). The emergence of robust external reviewers providing second opinions and third-party certification has also been fundamental to ensure transparency and credibility in the green bond market (Climate Bonds Initiative, 2017[115]). For instance, SITAWI is leading the PEAX initiative (Programa de Fomento à Estruturação e Avaliação Externa de Títulos Verdes), which aims to enhance the local green bond market by providing, free of charge, second public opinions for issuances that are eligible to receive the green bond label (SITAWI, 2020[121]). Recently, the Central Bank launched its new sustainability agenda that will integrate sustainability into the Central Bank's supervisory and regulatory framework, and include climate change into its stress-testing regime. If implemented, the Central Bank can make considerable headway in improving the enabling environment for climate action and mobilising commercial capital for this purpose.

4.4. Brazil's DFIs aim to increase domestic, regional and international co-operation to advance the blended finance agenda

To advance the blended finance agenda in Brazil, surveyed institutions see particular value added in increased co-operation and co-ordination among ABDE members, as well as with other relevant domestic stakeholders. Dialogues with public entities and the private sector, facilitated by ABDE, is the main modality mentioned by survey respondents to potentially promote blending. Public sector entities could include national and sub-national governments, Brazil's National Congress and relevant regulatory institutions. An engagement with these institutions could be a platform to exchange on challenges encountered by Brazil's DFIs in mobilising commercial capital and successfully deploying blended finance instruments and mechanisms. Additionally, dialogues among Brazil's DFIs and private sector entities could support a better understanding of specific bottlenecks to the mobilisation of commercial capital and enable development finance actors to design targeted blended finance solutions and additionally relay information on these bottlenecks to policy makers. As mentioned above, influencing policy frameworks is an established role of domestic DFIs, given their trusted role in national contexts and their proximity to both the public and private sector (OECD, 2019[24]). As a good practice example of relevant DFIs' involvement in policy making, in 2018 BNDES participated in a Working Group on Capital Markets and Long-Term Savings, established by the Federal Government, which resulted in a legislative amendment proposal to encourage the participation of institutional investors in financing infrastructure (BNDES, 2018[104]).

Moreover, international co-operation can be an enabling factor for domestic DFIs to engage in blended finance. While international development finance from multilateral or bilateral development banks and DFIs is relatively small when compared to the size of many emerging economy DFIs, access to international

[24] See Box 4.4 for additional information on BDNES green bond issuance.

development finance on concessional terms and technical assistance has been extremely valuable for domestic institutions. According to the majority of survey respondents, technical assistance is one of the most relevant ways in which international DFIs can support the development of blended finance in Brazil. It is often critical in supporting efforts to build a pipeline of bankable projects and enable domestic DFIs to take on early stage investment risks that private investors are reluctant to shoulder. It also enables domestic DFIs to invest in new sectors and technologies, and fund projects to be showcased to the private financial sector for investment. A good practice example of this is the Minas Gerais Project Preparation Facility which BDMG is currently setting up in partnership with the IDB. The platform aims to attract the technical expertise and capabilities needed to prepare and structure feasible and high quality projects in municipalities in Minas Gerais (e.g. concessions and PPPs) to attract commercial capital (see Box 4.6).

Box 4.6. Case study: Minas Gerais Project Preparation Facility

BDMG, in partnership with the Inter-American Development Bank (IDB), is currently in the process of developing a sub-national project preparation facility - BDMG Platform, aiming to increase the level of infrastructure development and enhance impact investments in Minas Gerais and its municipalities.

The overarching objective is to create a pipeline of bankable infrastructure projects, with focus on water and sanitation, public street lighting, transport and social infrastructure, through the provision of technical and financial assistance for the preparation and structuring of public-private partnership (PPP) projects. In addition, BDMG Platform will promote policy dialogue frameworks to build effective regulatory practices and replicable project structures, with focus on regulatory preparedness and institutional strengthening.

The selection of PPP projects to be supported by the Platform will be based on the merit of their incremental development impacts, prioritising projects in sectors that contribute to sustainable development, climate resilience, energy efficiency and regional economic integration.

Designed to be a multi-donor facility, BDMG Platform will function as a revolving mechanism as successful PPP projects will reimburse all costs incurred with the project preparation services, ensuring its financial perpetuity and sustainability. The model of this Platform was inspired by the Brazilian Private Sector Participation (PSP) Facility, jointly developed by IFC, IDB and BNDES. Endowed with USD 12 million in capital, this Facility supports structuring of projects, from technical and economic feasibility studies to financial closing. To date, the PSP Facility has supported 10 infrastructure projects in Brazil, leveraging more than USD 6 billion in private investment (Pereira dos Santos, 2016[122]).

Broadly speaking, BDMG Platform will create a permanent tool to scale up the structuring of PPP projects, fostering private investments and sustainable operation of infrastructure assets. It will support the preparation of studies with technical quality and minimise dependence on public financial resources, while focusing on viable projects with high impact and adherence to the SDG.

Note: Further details on this case study can be found in Annex C.
Source: (Pereira dos Santos, 2016[122]), BDMG internal documents and interviews with staff.

A further example of the crucial role of co-operation between domestic and international financial institutions in Brazil is the Financial Innovation Laboratory (LAB), a joint initiative by ABDE, CVM (Brazil's Securities and Exchange Commission), IDB and GIZ (Box 4.7). The LAB aims at fostering the growth of the green finance market in Brazil and crowd in private capital, by improving the regulatory framework, evaluating new instruments and adopting international best practices (Climate Bonds Initiative, 2017[115]).

Box 4.7. The Financial Innovation Laboratory

Fostering financial innovation to mobilise private capital for sustainable development projects in Brazil

The Financial Innovation Laboratory (LAB) is a multi-sectoral forum launched in 2017 by ABDE, IDB, CVM and (since 2019) in partnership with GIZ. It aims to create new financing solutions to leverage private resources for projects with social and/or environmental additionality and to contribute to the achievement of the country's commitments to the 2030 Agenda and the Paris Agreement. Currently, the LAB is composed of about 200 member institutions, including e.g. development banks, commercial financial institutions, investors associations, and financial market regulators.

With the aim to foster cross-sectoral dialogue among members, the LAB organised its work into four Working Groups (WG), each focused on the following topics: (i) Green Finance; (ii) Financial Instruments and Impact Investments; (iii) Fintech, and (iv) ESG Risk Management and Transparency. In particular, the Financial Instruments and Impact Investment WG created a specific work stream on blended finance structures, with the objective of creating a favourable environment for the creation of investment instruments that gather public, private and philanthropic capital to invest in social impact businesses in Brazil. To date, at least two blended finance instruments have been developed within the LAB:

- **Energy Saving Insurance:** A blended mechanism bringing together a traditional credit line with a pay-for-success contract and an insurance on energy performance, with the aim to stimulate investors' confidence in investing in green projects. Pilot projects were conducted by three sub-national DFIs – Development Bank of Espirito Santos (Bandes), Goiás Fomento and Development Bank of the Extreme South (BRDE);
- **Investment Crowdfunding Pilot**: Launched in April 2020, this initiative aims to use crowdfunding platforms to use capital provided by development agencies as a leading investor to leverage private resources for investments in start-ups and projects with a social impact. The Development Agency of Rio Grande do Sul (Badesul) is currently piloting this platform.

Source: Inputs for this box were provided by ABDE and IDB. Further information can be found at: http://www.labinovacaofinanceira.com/publicacoes/

Increased regional co-operation can also be beneficial for the growth of the blended finance market in the LAC region, for instance among domestic DFIs in the region, the Latin American Association of Development Financing Institutions (ALIDE), regional development banks such as CAF and the Caribbean Development Bank, but also other regional actors such as the Latin American Venture Philanthropy Network (Latimpacto), the Association for Private Capital Investment in Latin America (LAVCA) or the Latin American Association of Insurance Agencies (LAAIA) and others. A number of regional co-operation activities already exist in the sustainable finance space and can be strengthened to further promote regional peer learning and sharing of knowledge, best practices, successes and failures. An example is the Green Finance LAC Platform, a knowledge exchange Platform created by the IDB, in cooperation with ALIDE and with support from donors and other organisations, developed to respond to a demand of domestic DFIs and other institutional players in the financial market for sharing information and knowledge about green financing (GFL Green Finance LAC, 2020[123]).

5. Emerging insights to advance blended finance in Brazil

In brief

- DFIs and their shareholders have a range of changes they can make to overcome challenges in advancing the blended finance agenda: DFIs need a stronger internal focus on mobilisation and they need to employ blended finance for a wide range of issues, sectors and in consultation with a range actors – including local actors and the most vulnerable populations – and with robust monitoring and evaluation systems. Further, a stronger evidence base on blended finance and a more conducive environment for mobilisation and private sector engagement are needed.
- In addressing ongoing challenges to blended finance and mobilisation, Brazil's DFIs can build on some emerging good practice approaches and lessons learned: Blended finance approaches, instruments and mechanisms should be designed to build markets and address local needs; the business case of investments needs to be demonstrated to commercial investors to build confidence and overcome perceived risks; and broader co-operation and co-ordination of blended finance stakeholders should continue to be beneficial.
- Further work to advance the evidence base on the size and scope of blended finance markets; the enabling environment for mobilisation; case studies on systems of development banking and local contexts, as well as peer learning and practical guidance on blended finance by development banks of the Global South could be useful in promoting blended finance and the mobilisation of commercial capital for sustainable development outcomes at scale.

5.1. Ongoing challenges in advancing blended finance

While the need to mobilise commercial capital for development projects is clearly recognised across Brazil's DFIs, blended finance – including for climate action as a prerequisite for sustainable development – is still nascent. Ongoing challenges and issues related to blended finance at scale remain.

A stronger internal focus on mobilising commercial finance is needed

Brazil's DFIs and relevant government shareholders increasingly recognise the importance of mobilising additional, commercial resources for development outcomes. At an institutional level, some DFIs are already engaging in blended finance, and others are exploring opportunities to expand their menu of development banking instruments. Overall, blending approaches to mobilise private resources are gaining traction but are still underutilised, compared to DFIs' more traditional business model of being sole financers of development interventions. The fact that Brazil is globally among the top ten destinations for private finance mobilised from official development finance interventions illustrates the potential of blending

that Brazil's domestic DFIs can capitalise upon. A stronger focus on mobilising additional, commercial investment, by deploying the best suited instrument given the characteristics and risks of a specific project, is needed and will require banks to re-envision the way in which they finance development. This is in particular the case for those institutions, including for example sub-national development banks, which are allowed to mobilise resources on capital markets as per the central bank's regulation. To integrate mobilisation considerations consistently across portfolios, Brazil's DFIs need to set up their fundamental parameters – e.g. funding models, mandates, performance indicators, strategies and capacities – to mobilise commercial investment, in particular from the local private sector, for sustainable development outcomes. Unless otherwise managed through these fundamental parameters, Brazil's DFIs will continue to be driven more by disbursements or commitments than by efforts to mobilise commercial finance or contribute to market creation. This can encourage an emphasis by institutions and individual officers on larger investments – that often involve the development bank as a sole financer – but does not necessarily encourage projects that engage the private sector through mobilisation and/or the creation of future-proof, markets that promote sustainable development.

Because Brazil's DFIs are publicly-owned or controlled institutions, governments – as shareholders, supervisory institutions and investors – need to promote stronger DFI mandates to deliver transformative action. This can be done by engaging in blending, reflecting this in corporate scorecards and putting in place supportive internal incentive systems to encourage staff to mobilise additional, commercial resources, and monitor and evaluate results. While research conducted for this paper shows that Brazil's DFIs often face significant capacity gaps to engage in mobilisation, the example of BDMG shows that this is not necessarily an issue of the size of an institution. Rather, the relatively small size of the institution, paired with a progressive institutional outlook can promote both blended finance and the intention to align with the SDGs. Strong monitoring systems and results frameworks that consider development, climate, mobilisation and market creation outcomes can further be enabling factors for blending in domestic DFIs, and are oftentimes favourable in receiving funding from MDBs and/or donor countries. DAC members traditionally support systems of environmental risk management in emerging economy and developing country development banks (Crishna Morgado and Taşkın, 2019[124]) and could also promote blended finance for climate through this well-established and proven support.

A greater emphasis on crowding-in commercial finance, where possible and relevant, could also be encouraged through corporate scorecards as the example of South Africa's DBSA shows (see Box 4.5). However, while the use of leverage ratios is a helpful metric depicted in annual reports to highlight the volumes of finance mobilised, they need to be dynamic, reflecting changes in sectoral context and considering development priorities. In particular, leverage ratios make little inference on the development impact of scarce public funding used and should thus not be used to prioritise sectors or projects. At the same time, Brazil's DFIs must also consider clear exit strategies for blending to avoid eventual crowding-out of commercial capital and the focus on financial additionality.

Blended finance needs to engage a wider range of issues and actors

While efforts to map blended finance by international and domestic development finance actors in this paper do not aim to be comprehensive and conclusive, one main point emerges from the analysis: blended finance in Brazil needs to be more strategically targeted by domestic DFIs if it is to deliver on the country's development priorities.

Additional resources mobilised by international development banks are mostly concentrated in the energy and banking and financial services sectors, and Brazil's DFIs also mobilise commercial capital for e.g. large-scale energy projects. This pattern reflects the tendency for blended finance to date to be channelled into sectors for which the business case is clear and the potential for commercial gains are apparent. For example, Brazil's renewable energy investment potential is estimated at USD 152 billion by 2030 and the country is already among the top countries for renewable energy investment (IFC, 2016[125]);

(BloombergNEF, 2019[126]). The high concentration of commercial investment and capital mobilised in e.g. renewable energy projects however deserves reflection. While there is a pronounced investment potential, blended finance in the energy and finance sectors will need an exit strategy to remain focused on mobilising *additional* capital to projects that would otherwise not attract these resources. To ensure the additionality and development impact of blended finance according to local priorities, it is important to explore its use in a wide range of sectors, disadvantaged regions, and/or in contexts with the highest impact for vulnerable populations. Blended finance to promote e.g. sustainable land use in the North and Northeast region could increase agricultural productivity, preserve natural capital, generate sustainable employment and income generating activities and decrease inequality. Additionally, it would support the transition to a low-emissions, climate-resilient economy that decreases vulnerabilities towards the global systemic risk of climate change. Governments and development banks could also explore the use of blended finance in natural infrastructure (such as forests, landscapes, wetlands and watershed protection) and nature-based solutions in e.g. rural areas in the North and Northeast regions as well as urban settlements more generally (Rode et al., 2019[127]), (Watkins et al., 2019[128]). Building on initial experience in using blended finance for innovation, Brazil's domestic DFIs could explore opportunities for green technologies in industrial sectors to drive productivity growth and an increase sustainable jobs as countries around the world are designing recovery measures that maximise the benefits on employment and growth.

While taking into consideration the impacts of climate change on all sectors and vulnerable populations as well as the opportunities of a green recovery from the COVID-19 crisis – a focus of governments and development banks on blended finance for climate action will be key in securing progress on sustainable development on the one hand, and the financial gains of green investment on the other hand. By levelling the playing field between climate action and business-as-usual projects, blended finance and policy and regulatory support for climate action can mobilise additional capital from market actors and contribute to the creation of future-proof markets in which societies can thrive.

In order to implement this vision, governments and development banks can work to revise incentive structures in development banks to reflect sustainability outcomes alongside financial targets. As mentioned above, unless otherwise managed, corporate and staff performance in development banks can be driven more by financial indicators such as disbursement and commitments than by a contribution to development outcomes such as poverty reduction and climate action. Tools are emerging to better understand the impact of blended finance for a broad range of development issues. For example, the THK developed a checklist for assessing the impact of blended finance on the poor during different phases of the project cycle (Tri Hita Karana Impact Working Group, 2020[129])[25]. The need for development banks to focus more strongly on mobilisation cannot, and should not, come at the expense of development outcomes.

Brazil's development investment gap highlights the need for a wider range of actors to engage in and promote blended finance. Three domestic institutions are already engaging in blending, but to mobilise commercial capital at scale, including for different development priorities and contexts, institutions across the spectrum of Brazil's system of development finance need to increase efforts to start and/or expand blended finance operations. Additionally, governmental entities at different levels need to promote DFI efforts to mobilise commercial capital, including by empowering them to engage in blending and by putting in place a sound enabling environment for the mobilisation of commercial capital (see below). At the same time, where regulation already allows development banks to mobilise third-party resources, this opportunity must be taken by development banks. Lastly, collaboration, co-ordination, exchange of experience and capacity building between domestic and international development banks and DFIs could be increased to

[25] The checklist has also been aligned with the Impact Reporting and Investment Standards+ (IRIS+) metrics, a set of standardised metrics that investors can use to manage and measure the impact of an investment in an increasingly consistent and comparable way (Tri Hita Karana Impact Working Group and IRIS, 2020[200])

promote the blended finance agenda in Brazil. Brazil's DFIs have a key asset in place with ABDE, as the association is an already proven and trusted platform for exchange.

A stronger evidence base is needed of what works, what does not work and why

Brazil's DFIs have expressed the need for more information and evidence on what works, what does not work and why in mobilising commercial finance. This need for more information, evidence and transparency is not specific to Brazil, but reflects the global need for a stronger evidence base on a broad range of items: the magnitude and concessionality of development finance channelled towards blending approaches, and what is being mobilised as a result; what impact is achieved through blending; its financial and development additionality; and which instruments are most effective in mobilising commercial finance and addressing different risks and development priorities in different contexts.

The bedrock of such analysis and a stronger evidence is robust data on blended finance flows and their impact. As Brazil's DFIs are starting to engage in blended finance, it is important to establish early on institutional systems to collect and report data and information on development finance employed in blended finance transactions, commercial finance mobilised, as well as intended and achieved development impact. In particular the latter as well as the demonstration of financial and development additionality, can easily be neglected when data systems focus on tracking mobilisation. However, achieved development impacts and additionality are crucially important in development banks' ability to ensure the effective use of blended finance. Beyond individual institutions, much of what is known about blended finance today has been based on standalone surveys, and statistical and reporting systems for development finance (such as the OECD/DAC Creditor Reporting System, the OECD Survey on Blended Finance Funds and Facilities or the MDBs' work on tracking mobilisation). However, this work is mostly focused on individual projects (like the case studies in this paper), specific blended finance mechanisms like funds and facilities, and/or international development finance. The evidence base remains incomplete and, importantly, skewed towards mobilisation vs. development outcomes, and is not yet able to capture increasing efforts of emerging economy development banks in mobilising commercial capital and building local capital markets – and also defined the scope of this paper.

As Brazil's DFIs are beginning to engage in blended finance, collaboration, exchange of experience and capacity building with other ABDE members and international development actors could support Brazil's DFIs in establishing sound data collection and reporting systems, as well as monitoring and evaluation systems that include but go beyond amounts mobilised. Brazil's DFIs can, capitalise on the lessons learned of international institutions, and ensuring the effective use of blended finance in Brazil going forward.

Policy and regulatory environments are not yet fit for purpose

Blended finance instruments and mechanisms cannot replace efforts to establish a robust policy and regulatory framework that often remain insufficiently conducive for mobilisation. Importantly, while outside the scope of this study, regulatory frameworks can hinder the capacity of different types of DFIs to engage in blending. Efforts to engage in blending need to be accompanied by measures of governments, the Central Bank, financial supervisors and other regulatory institutions to promote an enabling environment for the different types of DFIs, mobilisation and local capital market development. This would include appropriate policies, regulation and institutional arrangements in e.g. the financial, agricultural and SME sectors that consistently promote the mobilisation of commercial capital. Overall, such reforms need to go hand in hand with the design of targeted blended finance instruments and mechanisms.

For instance, in-depth interviews highlighted that a Brazilian central bank regulation states that sub-national development banks can engage in equity investments as long as they hold minority positions and for a temporary timespan, although without specifying thresholds for the ownership position, nor for the time commitment. Clearer and unambiguous regulation (or communication thereof) could reduce

uncertainties and provide signals to sub-national development banks that can increase their engagement in equity investments and, coupled with sustainability requirements, promote business operations and private sector engagement for sustainable development and climate outcomes. Additionally, sluggish business environments and administration contribute to high transactions costs that can defer commercial actors' engagement in blended finance. Beyond specific policy and regulatory environments of DFIs, the recent inclusion of sustainability as a strategic focus of the Central Bank's agenda and responsibilities provides a strong signal to all financial institutions that climate change is a core financial risk and climate action holds significant investment potential. It will be important to build on the recent announcement and implement the Central Bank's agenda through policy and regulatory changes that will also be conducive to blended finance.

5.2. Emerging areas of good practice and lessons learned

While the blended finance market is still at a nascent stage in Brazil, and Brazil's DFIs have only recently started to engage in blending, some areas of good practice and lessons learned are already emerging that governments and Brazil's DFIs can build upon to scale up private sector engagement and mobilisation further:

Strengthen mandates, incentives and capacities to deliver transformative development and climate action: Governments need to give development banks stronger, more coherent mandates to deliver transformative climate action by integrating climate and the sustainability transformation with underlying development objectives. Incentive structures in DFIs should include mobilisation targets alongside traditional financial targets such as disbursement or commitment, and should additionally reflect sustainability outcomes. DFIs also need adequate capacity and skills to scale up transformational action on development, climate and mobilisation. They need to dedicate efforts to explore, design and implement investment models that support the promotion of new technologies and programmatic approaches centred on sustainability, climate action and market building, and avoid a bias towards acting as the sole financer of projects when private capital could be crowded in.

Explore the range of blended finance, choosing those instruments and mechanisms that best fit the specific project and its underlying risk: Blended finance is emerging in Brazil, and the few DFIs that are already engaging in blending employ a range of financial instruments, from grant provision and technical assistance to guarantees and investment in companies through private equity funds. As more of Brazil's DFIs explore opportunities for blending, it will be important to continue to use a range of blended finance instruments and mechanisms depending on the specific project at hand and it's underlying risk, and explore the use of blending in different contexts. For example, in the current COVID-19 crisis, guarantees are a promising instrument to limit the risk exposure and reduce the cost of capital from commercial lenders. According to the 2017 Survey on National Development Banks (World Bank Group, 2018[32]), more than 55% of the respondent NDBs[26] offer loan guarantees, and initial evidence highlights that the demand for guarantees has sparked as countries design and implement recovery packages to address the pandemic's effect.

The use of blended finance approaches also differs across sectors. From in-depth interviews conducted for this study, it emerged that Brazil's DFIs are increasingly, and already before the COVID-19 crisis, exploring blended finance for the water and sanitation sector. OECD evidence shows that the risk-return profiles and project attributes of water-investments differ across sub-sectors. It also indicates that several instruments can be applied at multiple entry points in the financing chain (2019[130]). In the water sector, a strong emphasis in blending is on the use of guarantees and technical assistance.

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[26] Total respondents to this Survey amount to 64 development banks, 78% of which are based in middle-income countries and 19% are located in Latin America and the Caribbean.

Design blended finance approaches, instruments and mechanisms to build markets: Blended finance constitutes a transitory market building tool that is designed to eventually enable stand-alone commercial investment by facilitating a track record, capacities and investor confidence in markets where commercial investors are not yet present. The example of BNDES highlights that Brazil's DFIs understand this two-pronged approach to blended finance and market building: the bank applied to its green bond issuance and private equity investments the overarching objective of market building, driven by, amongst others, its strategic objective of capital market development. BDMG's private equity investments also have capital market development as the overarching objective. Designing and employing blended finance hand in hand with efforts to build markets is additionally important as blended finance cannot compensate for an unfavourable enabling environment, and cannot fix flawed underlying business models.

Consult local actors and align blended finance transactions with local needs: As institutions with a development mandate that are part of their local financing context, Brazil's DFIs are aligning their financing and portfolios with set development priorities, and e.g. consult governmental entities in policy formulation and implementation. Additionally, in particular sub-national development banks serve local development needs, often through the promotion of MSMEs. Tailoring blended finance to local needs and, as mentioned above, designing blended finance to build local financial markets is important in efforts of Brazil's DFIs to enhance the effective use of blended finance. Systematically consulting local stakeholders involved or impacted by blended finance projects helps ensure consistency with the local development priorities and needs of final beneficiaries, promotes ownership of results and trust among stakeholders, and mitigates risks in project implementation. Furthermore, developing blended finance agendas of different DFIs while elaborating Brazil's Integrated National Financing Framework put forth by the Addis Ababa Action Agenda and the Federal Government's capital market initiative (*Iniciativa Mercado de Capitais*) can ensure that individual transactions and broader market building support defined development objectives. In particular in the contexts where poverty and inequality persist, due diligence processes should ensure that blended finance benefits the most vulnerable segments of the population. For example, in infrastructure financing, considerations on the affordability of infrastructure services should be at the forefront.

Demonstrate the business case for commercial investment and promote sharing of successes and failures: Brazil's DFI's are exploring the business case for commercial investment of e.g. solar and wind power projects, and where available, they demonstrate the business case to commercial investors. Commercial investors often continue to associate investment in emerging economies and developing countries with an unfavourable risk-return relationship that can be shaped by both real and perceived risk. Demonstrating the business case for commercial investment that can be created through blended finance instruments that adjust the risk-return profile of investments, is therefore important and requires a "cultural shift" to overcome risks. The survey and in-depth interviews conducted for this paper outline that Brazil's DFIs have also recognised the need for a cultural shift in their own institutions: To play a transformational role in Brazil's sustainable development efforts, they need to transition from a role of sole financer to mobilisers of commercial investors, including by demonstrating the business case of investments.

Co-operate and co-ordinate stakeholders for the success of blended finance: Brazil's DFIs are seeking co-operation and co-ordination with domestic and international stakeholders at policy and project levels to advance the blended finance agenda. Ongoing co-operation, collaboration and exchange facilitated through ABDE has already proven successful in other areas and can be built upon to advance the blended finance agenda. The engagement of e.g. BNDES in the amendment of the legislation to encourage the participation of institutional investors in infrastructure promotion illustrates the established role of domestic DFIs in influencing policy and regulatory frameworks and the broader legislature. Additionally, Brazil's DFIs are co-operating with e.g. MDBs and bilateral development banks in the framework of individual blended finance platforms and projects. In particular technical assistance from these institutions and development agencies has proven to be among the most important factors to facilitate blended finance. Additionally, the co-operation with e.g. commercial actors is important from the project preparation phase onwards due to different interests and mandates in blended finance

arrangements. As Brazil's DFIs enhance their blending efforts, it will be important to increasingly include the growing group of philanthropic organisations, such as foundations and venture philanthropies, active in blended finance. Overall, Brazil's DFIs have a unique opportunity to use Brazil's national system of development finance to engage in peer learning, co-operation and continuation with the ultimate goal of bridging Brazil's SDG investment gaps.

5.3. Research gaps and areas for further work

This paper provides a first overview of the state of blended finance in Brazil. The research conducted points to areas for further work that could be useful in supporting governments and development banks from Brazil and other emerging economies, as well as donor governments and international development finance providers to promote blended finance and mobilisation of commercial capital for sustainable development outcomes at scale.

Improved data, information, evidence and estimates of the size, scope and results of blended finance markets. Despite the largest volumes of financing for development originating domestically, no in-depth study or other systematic data and information was available of domestic development banks' engagement in blended finance at the time of writing. Establishing reporting by domestic development banks on amounts mobilised and the development impact of blended finance will be the basis for a more comprehensive assessment of blended finance markets in Brazil and other emerging economies. This work will be important to better analyse what works in blended finance, what does not work and why. It would also allow for a better overview of the institutional, governance, asset management factors within development banks and DFIs that can facilitate effective blended finance.

Dedicated research on enabling environments to enhance the underlying framework for blended finance. Standalone research exercises on enabling environments of different sectors and specific barriers to mobilisation would be helpful for governments, development banks and DFIs from the Global South as well as donor governments. Together with the increasing body of evidence on different blended finance instruments and structures, this work could help calibrate policy frameworks.

Case studies on systems of development banks and DFIs, and tailoring blended finance to local contexts. As highlighted in this paper and outlined in the OECD/DAC Blended Finance Principles, the potency of blended finance is subject to its response to local development priorities and needs, and its deployment by domestic development banks and DFIs of the Global South. Further research could focus on how systems of development banking – domestic systems and their interplay with international development banks and DFIs – in other emerging economies and developing countries can best advance the blended finance agenda, including by tailoring it to local contexts. Depending on the country context, different angles could be chosen, e.g. how sector-focused domestic development banks can mobilise commercial resources where the largest investment gaps and highest development impact exist or how sub-national development banks can support municipalities in leveraging scarce public funds – all within an overall focus of the work on effective systems of domestic and international development banking.

Lastly, further work could be geared towards ***peer learning and formulating practical guidance*** for development finance actors from emerging economies and developing countries in the areas mentioned above, and how MDBs, bilateral development banks and DFIs, development agencies and donor governments can best support these efforts.

Annex A. A primer on blended finance

Blended finance in the development co-operation landscape

In order to respond to the global development and climate challenges as laid out in the 2030Agenda for Sustainable Development and the Paris Agreement for Climate Change, the 2015 Addis Ababa Action Agenda (AAAA) put emphasis on the need to scale up both public and private investment. Blended finance offers a promising approach to crowd-in additional commercial finance that is not currently invested for development outcomes, leveraging on scares concessional resources when needed. The OECD DAC defines blended finance as the strategic use of development finance for the mobilisation of additional finance towards sustainable development in developing countries (OECD, 2018[8]). Development finance, in the context of this definition, includes official development finance (i.e. both concessional and non-concessional development finance from official sources) and private funds that are governed by a development mandate (e.g. financing provided by philanthropic organisations). Additional finance refers to commercial finance such as public and private sources of finance whose main purpose is commercial rather than developmental (e.g. investment by public or privately owned pension funds or insurance companies, banks, businesses, etc.).

In 2017, the OECD DAC endorsed the Blended Finance Principles for Unlocking Commercial Finance for the Sustainable Development Goals, a regulatory framework that works towards sustainability of blended finance as one approach to mobilise private finance in donors' toolboxes (Figure A.1). The OECD is currently developing guidance complementing the principles to provide further evidence.

Figure A.1. OECD DAC Blended Finance Principles

Source: (OECD DAC, 2018[15]), OECD DAC Blended Finance Principles, http://www.oecd.org/dac/financing-sustainable-development/development-finance-topics/OECD-Blended-Finance-Principles.pdf

Moreover, the OECD conducts a series of deep-dives into blended finance in specific contexts, including by sectors (water and sanitation (OECD, 2019[130]) and agriculture, forthcoming), by income group (OECD/UNCDF, 2019[2]) and a contribution to UNCDF (2018[3]), as well as specific contexts such as fragile contexts (Basile and Neunuebel, 2019[131])

At the same time, blended finance is a multi-stakeholder concept, dependent on concerted efforts by development actors, commercial players and civil society. The THK Roadmap was launched to establish a shared value system among international partners including governments such as Indonesia, Canada or Sweden, MDBs and DFIs, the private sector as well as civil society organisations (CSOs) and think tanks. Under the THK Roadmap, these actors engage in co-ordinated action to ensure that blended finance is contributing to sustainable development, including on developing good practice (OECD, 2018[132]).

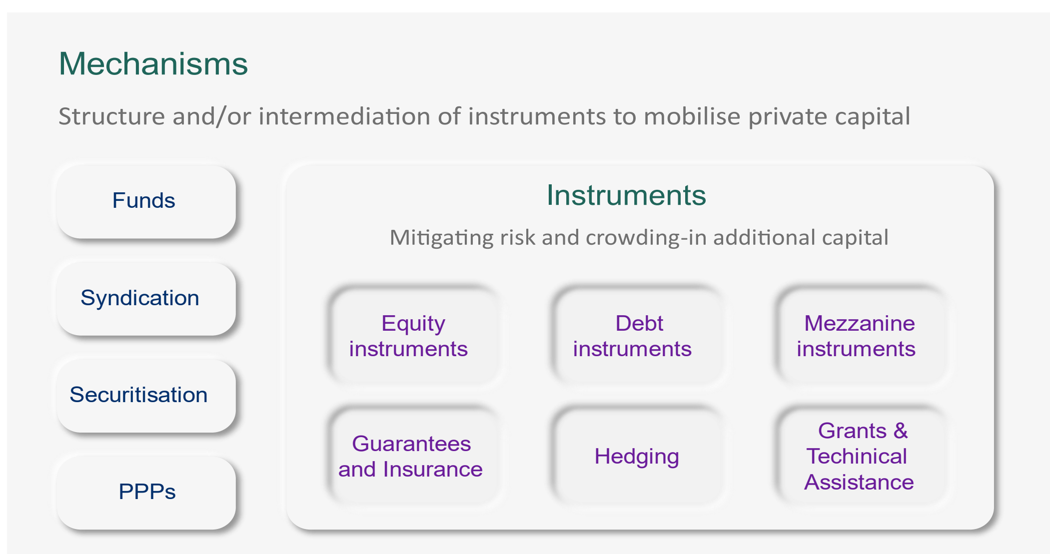
A wide and diverse set of actors is involved in blended finance operations

A wide range of actors is active in the blended finance space, with different mandates and motivations. Within the development finance sphere, there are three different categories of actors that can engage in blended finance transactions: (i) government ministries and bilateral aid agencies, (ii) public sector operations of bilateral and multilateral development banks, and (iii) specialised private sector operations or DFIs. Philanthropic organisations are also emerging as important actors in blended finance, as reflected in the increasing shift in recent years from a grant-based to an impact investing approach. Many commercial actors are also engaging in blending, ranging from institutional investors to private equity and venture capital funds, to banks and corporations.

Blended finance approaches involve the use of several financial instruments and mechanisms

Several financial instruments and mechanism can be used in blended finance to address the risk-return profile of investments (Figure A.2).

Figure A.2. Blended finance instruments and mechanisms



Source: (OECD, 2018[8])

Different instruments serve different purposes and should thus be used depending on the transaction's development objective, underlying risks and challenges. Instruments include:

- **Direct investments** – They are on-balance sheet investments that are conducted without any intermediary (e.g. a collective investment vehicle) and that typically consist of or can combine equity, debt, or mezzanine investments (i.e. with characteristics of both equity and debt) (OECD DAC, 2018[133]). By deploying development finance in either of these forms, commercial investors can be mobilised by improving the viability of a transaction or enhancing its credit profile (OECD, 2018[8]).
- **Credit lines** – They are a specific form of debt instrument. For example, a credit line can provide a local financial institution (LFI) in a developing country a credit facility that it may draw down (or repay) as needed, with the aim of increasing access to finance for particular borrower segments such as SMEs. A credit line thus facilitates mobilisation of additional commercial capital at the LFI level and at the end-borrower level (Benn, Sangaré and Hos, 2017[134]).
- **Bonds** – Project companies and corporate entities can issue bonds, which are fixed-income securities, to raise long-term debt finance for projects or ongoing operations. Bonds are marketable, liquid assets that address commercial investors' preferences and they are the dominant asset class favoured by pension fund managers in OECD countries (OECD, 2015[135]).
- **Guarantees and insurance** – By providing protection against different types of risks, guarantees attract more risk-averse investment capital. Credit guarantees are the simplest type of guarantees and they consist in obligations by the guarantor to pay (fully or partially) the principal and interest of a loan (or another financial instrument, such as a bond) in the event that the borrower is not able to repay, so that the investor is protected from capital losses. Both private and public entities provide guarantees, typically with a premium associated with the investment instrument to which they are attached (OECD, 2018[8]). Like guarantees, insurance can reduce specific types of risk in transactions by transferring the risk of loss to the provider for a predefined premium. It is available to cover mainly political risks as well as technical/physical risk in the infrastructure landscape (OECD, 2015[135]).
- **Hedging** – It is generally appealing to issue a bond or receive a loan to fund a development project or local enterprise in a major currency like the US dollar, euro or Japanese yen, given that they have lower yields and longer terms than instruments in local currency. However, this can place too much foreign exchange risk on the project or entity because the potential depreciation of the local currency can increase financing costs, when the revenue is generated in local currency. Local currency financing also often requires hedging against foreign exchange risk to attract adequate investment (OECD, 2018[8]).
- **Grants and technical assistance** – Grants are a direct monetary contribution to a project or fund without the expectation of a repayment in the future. Technical assistance can constitute a broad range of activities. Within blended finance, development finance providers usually contribute technical assistance in the project preparation phase to support activities such as feasibility studies, policy advice, capacity building and awareness raising that contribute to the overall success of a project and so boost investor confidence. Technical assistance also can take the form of monetary contributions, when multilateral development banks, other development banks or development finance institutions provide the financing for technical assistance. Grants and technical assistance are deployed when development impact needs to be supported by specific project capacity (OECD, 2018[8]).

Blended finance transactions can include not only the use of different financial instruments to crowd in commercial investments, but also mechanisms to structure one or more financial instruments together to unlock commercial capital. Such mechanisms include:

- **Securitisation** – It offers organisations the ability to utilise existing assets on their balance sheets to raise capital and free their balance sheets. Assets that are ideal for securitisation provide a stable and predictable future cash flow and commonly include mortgages, loans, accounts receivables and leases, among others. In the development finance context, the securitisation of loans provided by financial institutions can enable an influx of funds that provide necessary capital to finance new loans for entrepreneurs (OECD, 2018[8]).
- **Syndicated loans** – They are an effective way to mobilise private finance by spreading the risk of a borrower default across multiple lenders, reducing transaction costs and building on the track record and due diligence of the lead arranger's expertise in a particular area. MDBs usually take the role of lead arrangers with the private sector engaging as a B-loan provider. The division of the loan amount leads to risk diversification. The due diligence capabilities and reputation of the public sector arrangers (i.e. the MDBs) boost investor confidence and reduce transaction costs (OECD, 2018[8]).
- **Investment funds** or **collective investment vehicles (CIVs)** – address issues related to high risk, small investment volumes and limited sectoral or regional financial knowledge. CIVs provide access to a portfolio of projects in specific sectors or regions using different type of instruments, including equity, debt or guarantees. Thereby, larger volumes of commercial investment can be channelled towards sustainable development projects. Commercial investors benefit from risk diversification as well as often first loss coverage provided by development actors in the case of structured fund. In the blended finance context, the OECD distinguishes between two different pooled models: (i) blended finance facilities, i.e. donor government facilities that pool public resources to support blending further downstream and (ii) blended finance funds, that blend development finance from donor governments and DFIs with commercial finance. In addition to mobilising commercial capital at the fund-level, this type of CIV may also mobilise additional financing at the project, or investment, level (OECD, 2018[8]).
- **Public-private partnerships (PPPs)** – are an agreement between public and private entities where "the private partners deliver the service in such a manner that the service delivery objectives of the government are aligned with the profit objectives of the private partners and where the effectiveness of the alignment depends on a sufficient transfer of risk to the private partners" (OECD, 2008[136]). PPPs can be financed in blended forms, for example when development actors are mitigate credit or political risk for commercial actors (OECD, 2019[137]).

Annex B. OECD DAC methodology on amounts mobilised by the private sector

Reporting on amounts mobilised by official development finance from the private sector is part of the regular OECD DAC data collections since 2017. Some information is also collected through ad-hoc surveys in order to pilot new methodologies and to fill data gaps. Official development finance includes: (i) bilateral official development assistance (ODA); (ii) grants and concessional and non-concessional development lending by multilateral financial institutions; and (iii) other official flows for development purposes (including refinancing loans) which have too low a grant element to qualify as ODA.

The OECD DAC methodology for measuring the amounts mobilised from the private sector was developed under a high level mandate from DAC members and first data have been collected through ad-hoc surveys. Since 2017, the reporting at the activity level on this information has been fully implemented in the OECD-DAC regular data collection. The methodology progressively included guidance for reporting on the amounts mobilised – while avoiding double-counting at the international level – for seven major leveraging mechanisms: guarantees, syndicated loans, shares in collective investment vehicles (CIVs), direct investment in companies (DICs), credit lines, project finance schemes and simple co-financing arrangements. The OECD DAC datasets on mobilisation include information for all the seven leveraging mechanisms back to 2012.

Activity-level data on the amounts mobilised are, however, in many cases subject to confidentiality constraints. Concerning some MDBs, data-sharing agreements needed to be developed to facilitate the data provision to the OECD. Furthermore, the use of such data is often restricted to a specific number of analytical outputs. The OECD is in discussions with the banks to develop long-term solutions to address these concerns.

The private finance mobilised dataset is continuously being updated due to staggered reporting by development finance providers. This Working Paper presents the latest available data.

The official providers who report private finance mobilised to the OECD are: African Development Bank, Asian Development Bank, Australia, Austria, Belgium, Canada, Caribbean Development Bank, Council of Europe Development Bank, Credit Guarantee and Investment Facility, Czech Republic, Denmark, Development Bank of Latin America, EU Institutions, European Bank for Reconstruction and Development, Finland, France, Germany, Global Energy Efficiency and Renewable Energy Fund, IDB Invest, IFAD, Inter-American Development Bank, International Bank for Reconstruction and Development, International Development Association, International Finance Corporation, Ireland, Korea, Luxembourg, Multilateral Investment Guarantee Agency, Netherlands, Nordic Development Fund, Norway, Portugal, Private Infrastructure Development Group, Slovak Republic, Spain, Sweden, Switzerland, United Kingdom, United States.

Annex C. Case studies

Table C. 1. Investment Guarantor Fund

	FGI – Investment Guarantor Fund
Institutions involved	Shareholders include: the Brazilian Guarantees and Fund Managements Agency (ABGF), BNDES, sub-national development banks such as BDMG and BRDE, as well as public and private banks. BNDES is the Fund manager.
Blending instrument	Guarantee fund
Challenge	Micro and small-sized enterprises (MSEs) are key actors of the Brazilian economy, accounting for 98.5% of all legally constituted companies (11.5 million), for 27% of GDP, and for 41% of the total payroll. SMEs often face challenges in accessing credit from classic financial institutions and the Brazilian government has taken on a more active role to provide financial services to such small businesses (OECD, 2020[138]).
Solution	Established in 2009, the FGI provides guarantees to micro- small- and medium-sized enterprises, as well as individual entrepreneurs, and self-employed truck drivers, so as to facilitate their access to credit from financial institutions and improve financing conditions (e.g. longer terms, lower collateral requirements and lower interest rates). Guarantees can be provided to loans extended by BNDES, either directly or indirectly, through DFIs and other financial institutions. The Fund also has the FGI Free Credit, which allows the Fund to provide guarantees to loans contracted by financial institutions without making use of BNDES resources.
Results/Impact	The FGI has so far guarantees loans for an amount of BRL 7.4 billion (USD 2 billion), supporting 37 thousand operations mainly related to working capital financing, but to some extent also to investment and innovation. From 2017 to 2018, the FGI Free Credit Line grew by 156,8%. Since the FGI creation until December 2018, 62% of FGI's beneficiaries were new borrowers, that were not able to access BNDES's resources without the FGI guarantee, demonstrating the additionality and mobilisation potential of the instrument.

Source: (BNDES, 2020[102]); (Griffith-Jones and Ocampo, 2018[101]); (Lanz and Tomei, 2017[100]); (OECD, 2020[138]); and research conducted by SITAWI.

Table C. 2. BNDES direct investment in company: Sunew

	BNDES direct investment in Sunew
Institutions involved	BNDES, CSEM (a Brazilian research center), Sunew and private investors
Blending instrument	Direct equity investment in company
Challenge	Financing research and development for innovative and green technologies, as well as subsequent commercialisation can be particularly challenging, due to the investment needs as well as the typically high risks of innovation. Financing innovation and technological developments for green solutions can have huge potential for promoting sustainable development requires patient capital, a long-term horizon, willingness to take risks and experiment, as well as innovative partnerships.
Solution	Sunew is a spin-off company aiming at the large-scale manufacturing and commercialisation of Organic Photovoltaic (OPV) films to generate clean solar energy.

	The OPV technology was developed by the Brazilian research center CSEM, which BNDES financially supported in 2013 through FUNTEC, a technology fund that provides grants for R&D projects developed jointly by research institutions and companies. The FUNTEC agreement provided for the pre-emptive right for BNDESPAR to eventually participate in the start-up companies created to produce and commercialise the products resulting from the research. This right was exercised by BNDESPAR in the context of Sunew, CSEM's spin-off company. In 2015, BNDESPAR subscribed shares in Sunew for an amount of BRL 4.5 million (USD 1.3 million), which gave it right to 30% of the company's shares, with the rest held by CSEM (45%), a private investor (15%) and the company's funders (10%). Subsequently, there have been further capital increases, mainly needed to enable commercialisation of the OPV films, in which Sunew was successful in attracting capital from four new private investors, including some angel investors. BNDESPAR then approved subsequent capital increases to maintain its ownership interest in Sunew (BNDES, 2017[107]).
Results/Impact	The company Sunew is considered an innovation pioneer in Brazil, positioning itself at the forefront of the solar energy technology market. The company offers a variety of products with Organic Photovoltaic (OPV) films, an innovative technology to generate clean solar energy. According to Sunew, each square meter of the OPV avoids the emission of 120 kg of CO2 per year.

Source: (BNDES, 2017[107]); BNDES internal documents and interviews with staff

Table C. 3. BNDES direct investment in company: *Bug Agentes Biológicos*

	BNDES direct investment in Bug Agentes Biológicos (Bug)
Institutions involved	BNDES, Bug, private investment funds, Dutch company Koppert Biological Systems
Blending instrument	Direct equity investment in company
Challenge	*Bug Agentes Biológicos* (Bug) *i*s a small company operating in the sector of biological pest control in agricultural crops in Brazil. Created in 2001 by three biologists, Bug needed managerial experiences as well as financial capital to operationalise and commercialise the innovative agricultural technology it developed (Rufino, 2016[108]).
Solution	In 2009, BDNES provided a capital contribution of BRL 1.5 million (USD 0.7 million) to the company through the CRIATEC Fund I, enabling it to finance a production plant, create a commercial department and hire new employees. In 2015, and under BNDES's Investment Maintenance Programme, BNDES extended an additional credit line of BRL 1.9 million (USD 0.6 million) to Bug. CRIATEC's investment and managerial support to Bug mobilised BRL 7.3 million (USD 2.2 million) of two Brazilian investment funds (Rufino, 2016[108]). In the meantime, Bug was able to significantly accelerate growth, with net operating revenues almost tripling over 7 years, from BRL 3.4 million (USD 1.7 million) in 2009 to BRL 9.7 million (USD 3.5 million) in 2016, as well as create jobs and register patents and new products (Inseed, 2017[109]). Bug also received international recognition. In 2014, it was nominated Technology Pioneer by the World Economic Forum for enabling a "greener tomorrow", by "reducing the need for pesticides in Brazil through mass production of parasitic wasps which target pests that prey on crops" (World Economic Forum, 2014[110]). In 2017, CRIATEC sold Bug's stocks to a Dutch biochemical company Koppert Biological Systems.
Results/Impact	After developing an innovative technology to produce wasps and other insects that kill agricultural pests in agricultural crops, Bug was able to invest in an insect production factory and commercialise the products. Bug's activity reduces the need for pesticides in Brazil through mass production of parasitic wasps which target pests that prey on crops. For Bug, this technology, alongside chemical pesticides and genetically modified seeds, is crucial to guarantee global food safety through increased productivity (World Economic Forum, 2014[110]). Bug's acquisition by the Dutch biochemical company Koppert Biological Systems strengthened Brazil's positioning in the macro-biological crop protection market in Latin America.

Note: The BNDES Investment Maintenance Program (BNDES PSI), launched in 2009, providing (subsidised) loans especially to micro, small and medium-sized companies, as part of the government's measures to mitigate the effects of the international financial crisis.
Source: BNDES internal documents and interviews with staff; (Inseed, 2017[109]); (Rufino, 2016[108]); (World Economic Forum, 2014[110]).

Table C. 4. Minas Gerais Project Preparation Facility

	Minas Gerais Project Preparation Facility
Institutions involved	Minas Gerais Development Bank (BDMG) and the Inter-American Development Bank
Blending instrument	Grants and Technical Assistance
Sector(s)	Water and sanitation, street lighting, transport and social infrastructure
Challenge	Limited technical resources and capacity to structure feasible projects is a key challenge to enhance private sector participation and mobilise private capital. Good understanding of complex and regulatory frameworks at the national level is crucial for project preparation with public and private participation.
Solution	BDMG, in partnership with the Inter-American Development Bank (IDB), is currently in the process of developing a sub-national project preparation facility - BDMG Platform, aiming to increase the level of infrastructure development and enhance impact investments in Minas Gerais and its municipalities. The overarching objective is to create a pipeline of bankable infrastructure projects, with focus on water and sanitation, public street lighting, transport and social infrastructure, through the provision of technical and financial assistance for the preparation and structuring of public-private partnership (PPP) projects. In addition, BDMG Platform will promote policy dialogue frameworks to build effective regulatory practices and replicable project structures, with focus on regulatory preparedness and institutional strengthening. The selection of PPP projects to be supported by the Platform will be based on the merit of their incremental development impacts, prioritizing projects in sectors that contribute to sustainable development, climate resilience, energy efficiency and regional economic integration. Designed to be a multi-donor facility, BDMG Platform will function as a revolving mechanism as successful PPP projects will reimburse all costs incurred with the project preparation services, ensuring its financial perpetuity and sustainability. The model of this Platform was inspired by the Brazilian Private Sector Participation (PSP) Facility, jointly developed by IFC, IDB and BNDES. Endowed with USD 12 million in capital, this Facility supports structuring of projects, from technical and economic feasibility studies to financial closing. To date, the PSP Facility has supported 10 infrastructure projects in Brazil, leveraging more than USD 6 billion in private investment Broadly speaking, BDMG Platform will create a permanent tool to scale up the structuring of PPP projects, fostering private investments and sustainable operation of infrastructure assets. It will support the preparation of studies with technical quality and minimize dependence on public financial resources, while focusing on viable projects with high impact and adherence to the sustainable development goals.
Results/Impact	The Platform is expected to prepare feasible and high quality projects which will be able to attract private investors' participation and resources, in line with their risk and return appetites.

Source: Internal documents and interviews with BDMG staff

Table C. 5. BNDES green bond issuance

	BNDES green bond issuance
Institutions involved	BNDES, Bank of America, Credit Agricole and JP Morgan, Sustainalytics, private investors and private companies.

Blending instrument	Bond
Sector(s)	Green energy
Challenge	Since 1990, primary energy demand in Brazil almost doubled, mainly due to significant growth in electricity consumption and increased demand in transport fuels, needed to sustain robust economic growth in the country (IEA, 2020[139]). While Brazil is endowed with large renewable While having an energy consumption largely fueled by renewable energy resources, Brazil committed to achieving 45% of renewables in its energy mix by 2030, including by raising the share of wind, biomass and solar (Federative Republic of Brazil, 2015[140]).
Solution	In 2017, BNDES issued a USD 1 billion green bond to finance environmentally sustainable projects in Brazil. The 7-year bond was listed in the Luxembourg Green Exchange, was coordinated by the Bank of America Merrill Lynch, Crédit Agricole and JP Morgan and received a Ba2 rating from Moody's. It was issued with a 4.75% annual coupon, lower than the 5.25% originally expected, due to oversubscription, with demand reaching USD 5 billion, with orders from over 370 investors (Climate Bonds Initiative, 2017[115]). Sustainalytics, acting as external reviewer, provided a second opinion on BNDES green bond framework. The bond's proceeds were fully allocated to eight wind power generation projects.
Results/Impact	The financed wind power generation projects resulted in a total of 1,323 MW of new installed capacity and 421,608 tons of CO2-equivalent estimated to be avoided each year (BNDES, 2018[114]). Other than mobilising the needed resources to finance wind energy generation projects, according to BNDES, the issuance allowed BNDES to diversify its investors' base. Green bond investors consisted of asset managers (68%), hedge funds (13%), insurance and pension funds (9%) and banks (9%) (BNDES, 2018[116]). Importantly, the bond issuance mostly mobilised conventional, i.e. non-green, investors. The transaction also encouraged other Brazilian issuers to access the green bond market and built a new reference point in the structure of this market for international interest rates (BNDES, 2017[117]). According to research conducted by SITAWI, the issuance motivated the sub-national development banks BDMG and BRDE to also issue green bonds. By financing wind power generation projects, BNDES green bond issuance was also crucial for the development of the wind power industry in Brazil.

Source: (BNDES, 2017[117]); (BNDES, 2018[114]); (BNDES, 2018[116]); (Climate Bonds Initiative, 2017[115]); (Federative Republic of Brazil, 2015[140]); (IEA, 2020[139]); and research conducted by SITAWI.

Table C. 6. BDMG invests in AvantTI Investment Fund

	AvanTI Investment Fund
Institutions involved	BDMG, a French and a Brazilian mass media group, a domestic pension fund, as well as a private equity firm acting as fund manager
Blending instrument	Collective Investment Vehicle
Sector(s)	Information and communications technology (ICT)
Challenge	Early- and growth- stage companies face severe challenges in raising capital to finance their activities, including research and development or commercialisation of new technologies. However they often have high potential in terms of innovation, growth and job creation. These challenges are particularly acute in contexts where the venture capital and private equity markets are not fully developed.
Solution	In 2014 BDMG invested in the Investment Fund AvanTI, which in turn invests in a diversified portfolio of growth-stage ICT companies operating in the education, health, media and financial services sectors. Target companies have annual revenues ranging from BRL 12 to 50 million (approximately USD 3 to 14 million) in the year before the investment. The Fund was designed to be active for eight years, with two distinct phases: The first five years focused on investment in target companies and the last three years focused on planned divestment of these same companies. The Fund is currently in

	the second phase and has already sold the shares of one of the portfolio companies. Planning an exit phase and defining a clear exit strategy is important to avoid crowding out private capital, to support market development or creation through demonstration effects, as well as to enhance returns and free up capital for new investments. The Fund's expected results include support to early-stage innovative companies, the development of the local venture capital industry, as well as job creation. BDMG holds a 4.4% shareholding position in the Fund, having contributed BRL 6.24 million (USD 1.7 million). As BDMG is a regional development bank mandated to work in the State of Minas Gerais, the Fund must invest in companies in Minas Gerais for an amount at least equal to the BDMG investment in the Fund. In addition to BDMG, investors in AvanTI include a French and a Brazilian mass media group, a domestic pension fund, as well as a private equity firm acting as fund manager (Exame, 2014[111]). The presence of BDMG as a shareholder lowered the perceived risk of the Fund and gave confidence to other institutions to invest in the Fund.
Results/Impact	The Fund's expected results include support to early-stage innovative companies, the development of the local venture capital industry, as well as job creation.

Source: (Exame, 2014[111]), BDMG internal documents and interviews with staff

Table C. 7. BDMG direct investment in pharmaceutical company Biomm

	Biomm: an innovative pharmaceutical company in Brazil
Institutions involved	BDMG, BNDES, a Brazilian private equity firm and Biomm's funders
Blending instrument	Direct investment in company
Sector(s)	Biopharmaceuticals
Challenge	Non-communicable diseases are a major challenge for sustainable development in Brazil. Brazil ranks among the top five countries with the largest number of individuals with diabetes and evidence suggests that diabetes prevalence has increased by 61.8% in the last 10 years (Bahia et al., 2019[141]). Moreover, 100% of the insulin consumed to control and treat diabetes in Brazil is currently imported.
Solution	In 2013, BDMG invested in the biopharmaceutical company Biomm, listed in the Brazilian stock exchange, which is implementing an industrial unit in Minas Gerais for large-scale production of insulin using the recombinant DNA technology. In terms of financial contribution, BDMG provided BRL 40 million (USD 11 million) in equity and BRL 56 million (USD 15 million) in other forms of financing. The overall recapitalisation of the company amounted to BRL 540 million (USD 148 million), thanks to financial contributions by BNDES, a Brazilian private equity firm and Biomm's funders. BDMG currently holds a 6.7% shareholding position in the company and the share reached 8.5% in the past. BDMG has a seat in the company's Executive Board although it is not actively involved in control and planning. The presence of development banks such as BNDES and BDMG as shareholders of the company contributed to mitigate the company's risk and mobilised private investors.
Results/Impact	The expected result of the company is to localise the large-scale production of insulin, using an innovative technology, reduce the dependence on insulin imports and eventually achieve self-sufficiency and fully satisfy the domestic insulin demand to cure diabetes. This investment will also further develop the Brazilian biopharmaceutical market and its technological potential.

Source: BDMG internal documents and interviews with staff

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